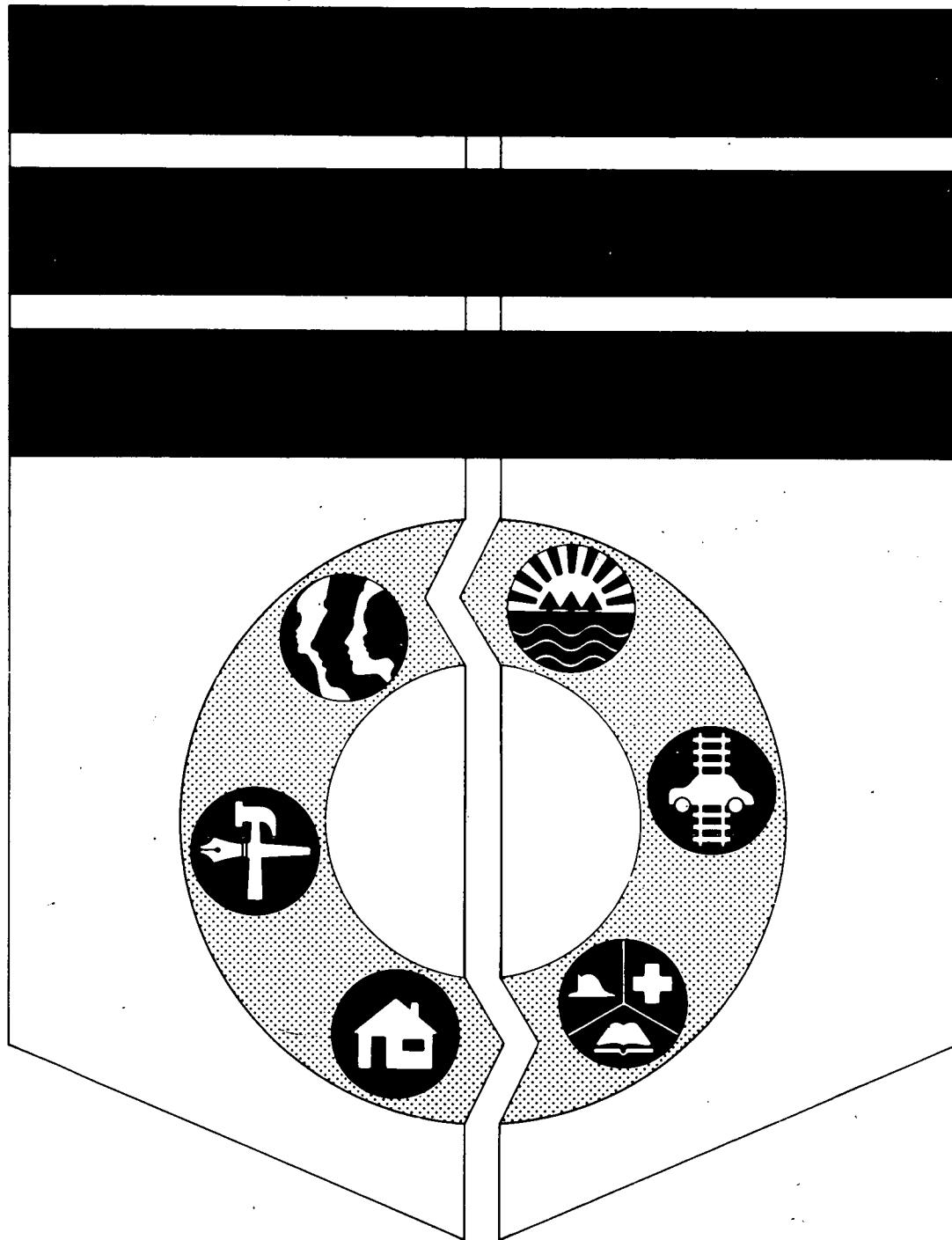


1982 REPORT ON COMPREHENSIVE PLANNING POLICIES

INCLUDING
NEW GUIDELINES FOR THE ADMINISTRATION OF
THE ADEQUATE PUBLIC FACILITIES ORDINANCE



ABSTRACT

TITLE: 1982 Report on Comprehensive Planning Policies including guidelines for the administration of the Adequate Public Facilities Ordinance.

AUTHOR: Montgomery County Planning Board of the Maryland-National Capital Park and Planning Commission.

SUBJECT: Adopted Land Use and Staging Policies, Forecasts for Households, Population and Employment, development activity monitoring, and new guidelines for the administration of the Adequate Public Facilities Ordinance.

DATE: March 1983

PLANNING AGENCY: The Maryland-National Capital Park and Planning Commission
8787 Georgia Avenue
Silver Spring, Maryland 20907

SERIES NUMBER: 0125832509

NUMBER OF PAGES: 138

ABSTRACT: This document is intended primarily to serve the function of amending the Montgomery County Planning Board's current administrative guidelines for the Adequate Public Facilities Ordinance.

As a composite document, it combines a set of interrelated policies and data in one convenient reference volume. These provide an overview of the composite land use and staging policies of the County, especially as they apply to land use regulation.

The report includes revised forecasts for County population and housing, updated inventory data on development progress, and extracts of all previously adopted staging policies as contained in various master plans, sector plans and functional plans.

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THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

The Maryland-National Capital Park and Planning Commission is a bi-county agency created by the General Assembly of Maryland in 1927. The Commission's geographic authority extends to the great majority of Montgomery and Prince George's Counties: the Maryland-Washington Regional District (M-NCPCC planning jurisdiction) comprises 1,001 square miles, while the Metropolitan District (parks) comprises 919 square miles, in the two Counties.

The Commission has three major functions:

- (1) the preparation, adoption, and from time to time amendment or extension of the General Plan for the physical development of the Maryland-Washington Regional District;
- (2) the acquisition, development, operation, and maintenance of a public park system; and
- (3) in Prince George's County only, the operation of the entire County public recreation program.

The Commission operates in each county through a Planning Board appointed by and responsible to the county government. All local plans, recommendations on zoning amendments, administration of subdivision regulations, and general administration of parks are responsibilities of the Planning Boards.

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EXECUTIVE SUMMARY

Introduction

In 1982, the Montgomery County Planning Board adopted its first Annual Comprehensive Planning Policies (CPP) Report. That document dealt with the general subject of comprehensive staging in the County, and incorporated a new set of administrative guidelines for the Planning Board to follow in administering the County's Adequate Public Facilities (APF) Ordinance.

This second annual report revises some of the guidelines adopted in last year's report. Specifically, it raises the thresholds of permitted development in areas of the County to correspond with the increases in programmed transportation capacity adopted by the County Council in its Capital Improvements Program of May 1982.

In addition, it incorporates some of the recommendations of a Blue-Ribbon Citizens Technical Advisory Committee, appointed by the Board to analyze and comment on the entire CPP process established last year. For a full report of the Committee's conclusions, reference should be made to its report of October 6, 1982. The most important of the Committee's recommendations included herein are the "discounting" systems for reducing the pipeline of outstanding APF-approved subdivisions to a level that realistically matches the six-year time frame of the County's adopted Capital Improvements Program (CIP). Other Committee recommendations will be studied by planning staff during the coming year, for possible inclusion in next year's CPP report in fall 1983.

This year's document is intended to serve functions similar to those of last year's report. One is to update the changes in development capacity that are engendered by changes in the Capital Improvements Program, adopted the preceding May, or by other factors, such as changing transit ridership, etc. Another function is to update the County growth forecasts, for which the Board is responsible, on a more regular basis than has been the case in the past. Related to this is a periodic updated report on development projects in the pipeline of permit approval.

The report provides an up-to-date, single reference work that summarizes the current status of all the various adopted or amended master plans, sector plans, functional plans, etc., especially with respect to their cumulative staging implications. By combining all these elements in one document, the public can get a better feel for the relationship between the various elements of past, present, and future that together make up the current composite fabric of comprehensive planning policy for the County.

The main elements of this report are as follows:

Chapter One - Adopted Policies

This chapter contains an extract of all the major staging guidelines of the various adopted master, sector or functional plans. Due to time pressures, it is not totally complete at the present time. This chapter is for information only and no actions are required.

Chapter Two - Forecasts

This chapter contains revised forecasts for population, housing, and employment by planning areas within the County. These forecasts have been revised based upon demographic data obtained from the 1980 Census. The adoption of this document by the Board, after public hearing, will constitute the official action of updating the forecasts.

Chapter Three - Status

This chapter describes the status of the development pipeline of permit approvals. It is presented for information only, and no further actions are required.

Chapter Four - Staging

This chapter outlines the method adopted last year of calculating the adequacy of transportation facilities for Planning Board administration of the APF Ordinance. In general, it involves a shift from the previous application of a uniform and constant level of traffic service criterion to all intersections throughout the County, to a more comprehensive level of traffic service criterion, that: (1) includes transit facilities in a much better way, and (2) recognizes the transportation differences that do, and should, exist between different subareas of the County, especially with respect to their degree of transit service availability.

The new method involves the identification of "policy areas" within the County, which are organically related to both transportation and drainage-sewer areas. Each policy area is assigned a "threshold" level of development, expressed in both residential and employment terms, which is keyed to the ability of the existing and programmed transportation system to carry it without excessive stress. Subdivisions which add development above this threshold level will be judged to exceed the "adequacy" of the public facilities, and may be refused approval. Provision has been made for both (1) exceeding the threshold under special and unique conditions, and (2) stopping development short of the threshold, if it can be demonstrated that any further development will cause excessive local traffic congestion.

The specific actions generated by this chapter, after public hearing, will be the reaffirmation by the Planning Board of the following administrative guidelines: (1) the threshold approach outlined above; (2) the definition of a Capital Improvement project as being one which is shown in the adopted CIP as having at least 50 percent of its total construction cost to be expended within the six-year time frame of the CIP; (3) the shift from counting existing development plus outstanding record plats, to counting existing development plus sewer authorizations as the basis for calculating policy area thresholds; (4) a revised set of thresholds, expressed in terms of dwelling units and number of employees, for each of the policy areas outlined herein; and (5) a discussion that accompanies each policy area which notes certain residual problems and possible public improvements that could be undertaken to improve the situation. The last item is intended to stimulate further thought and discussion and is not intended to be completely comprehensive or definitive.

I
DEVELOPMENT
PLANS
AND
POLICIES

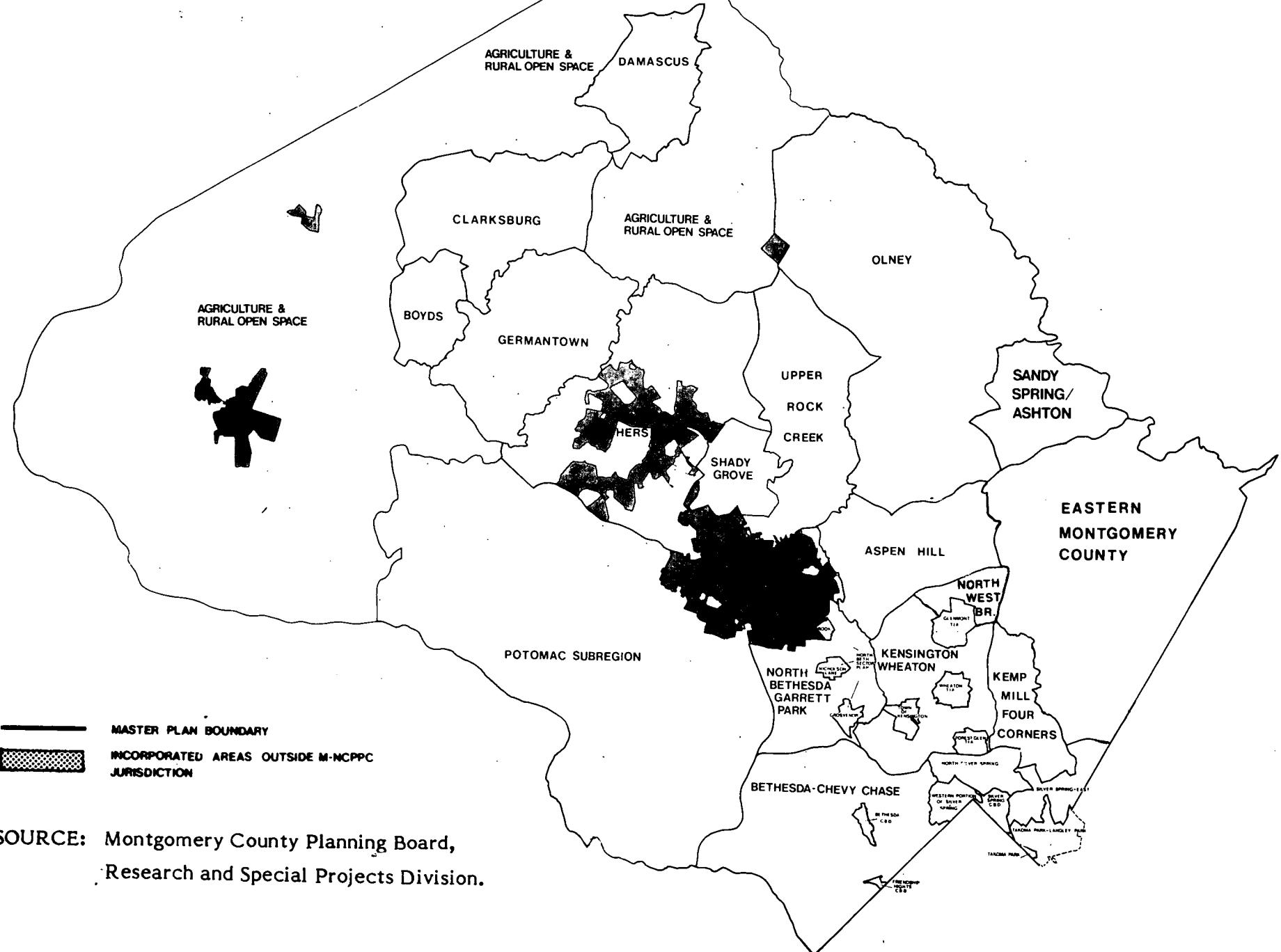
COMPREHENSIVE
PLANNING
POLICIES

All land use planning in Montgomery County is based upon the County's General Plan. The General Plan "On Wedges and Corridors" was adopted in 1964 and updated in 1969. The General Plan has been refined by the adoption of local area master plans, sector plans, subregional plans and functional master plans. This section of the report provides direct extracts from only the plans which include development staging guidelines. The reader should refer to each master plan since the following extracts do not include maps and charts. The Plan extracts are in alphabetical order.

TABLE 1

<u>Master Plans</u>	<u>Initial Date of Adoption</u>	<u>Date of Last Adopted Amendments</u>	
Aspen Hill Planning Area	December 1970	October 1979	
Bethesda-Chevy Chase Planning Area	October 1970	November 1981	
*Boyd's	May 1978	November 1982	
*Clarksburg and Vicinity	September 1968		
*Damascus	June 1982		
*Eastern Montgomery County	November 1981		
*Gaithersburg & Vicinity	January 1971	July 1982	
*Germantown	January 1974	November 1982	
Kemp Mill-Four Corners & Vicinity	May 1967		
Kensington/Wheaton	September 1959	July 1982	
North Bethesda/Garrett Park Planning Area	December 1970		
*Olney	June 1980		
*Potomac Subregion	May 1980	September 1982	
Poolesville Vicinity	September 1980		
*Rock Creek	October 1968	March 1980	
*Sandy Spring/Ashton Special Study	November 1980	February 1981	
*Silver Spring East	March 1977		
Silver Spring West	April 1972	August 1976	
Takoma Park	May 1982		
Upper Northwest Branch	April 1961	November 1981	
Upper Rock Creek	November 1967	March 1980	
<hr/>			
<u>Sector Plans</u>			
*Bethesda CBD	June 1976	November 1982	
Capitol View	July 1982		
Forest Glen Transit Impact Area & Vicinity	July 1978		
Friendship Heights CBD	June 1974		
Glenmont Transit Impact Area & Vicinity	July 1978		
Kensington Town & Vicinity	September 1978		
*North Bethesda, Grosvenor, Nicholson Lane	May 1978	February 1981	
*Shady Grove Transit Station Area	April 1977		
*Silver Spring	July 1975	June 1978	
Silver Spring North	July 1978		
*Takoma Park Transit Impact Area	October 1974		
Westbard	September 1982		
Wheaton CBD & Vicinity	July 1978	July 1982	
<hr/>			
<u>Functional Plans</u>			
*Agricultural Preservation	October 1980		
Bikeways	June 1978		
Historic Preservation	September 1979		
Highways	June 1955		
Rock Creek Watershed	May 1980		
Seneca Creek and Muddy Branch Watersheds	February 1977		

MNCP&PC
AREA MASTER PLANS



SOURCE: Montgomery County Planning Board,
Research and Special Projects Division.

AGRICULTURAL PRESERVATION FUNCTIONAL MASTER PLAN

Adopted October 1980
(Starting on Page 59)

WATER AND SEWERAGE GUIDELINES

Water and sewer service are two of the most significant public services that control the timing of development. The recommended guidelines are designed to permit little, if any, additional service within the Study Area with the exception of the growth areas--Damascus, Clarksburg, Olney, and Poolesville. The selective and limited expansion of public water and sewer service will support and help implement the preservation recommendations expressed in this Plan. Service to the Agricultural Preservation Study Area is shown on the Existing Public Resources Maps.

Recommended Water and Sewerage Guidelines

- Consistent with recommendations in the Fifth Annual Growth Policy Report, the entire Study Area (Policy Area I) is not recommended for public sewer service within the next 20 years, with the exception of Clarksburg.
- Deny public water and sewer service to areas designated for agricultural preservation that utilize the Rural Density Transfer Zone (RDT).
- Endorse existing policy to relieve public health problems beyond the sewer envelope by permitting publicly sponsored individual or community system installation under controlled conditions.
- Continue investigation of alternative publicly sponsored individual and community systems for application in areas experiencing community-wide or scattered public health problems beyond the sewer envelope.
- Deny private use of alternative individual and community systems in all areas designated for the Rural Density Transfer Zone (RDT).
- Study the possible application of private alternative individual and community systems in rural open space areas.
- Develop water and sewer policies for the Damascus area that complement its critical location within the Agricultural Reserve as part of the Damascus Master Plan update process.
- Study rural communities and villages for those should be considered for publicly sponsored alternative individual and community systems to help increase the amount of low and moderate cost housing and solve related health problems.
- Support the water and sewer recommendations expressed in the Olney Master Plan and Poolesville Vicinity Master Plan.

- Provide solutions to water resource problems in the form of conservation, treatment, and animal waste management measures. In conjunction with the Little Seneca Lake project, a report entitled Seneca Creek Watershed was published by the Montgomery and USDA Soil Conservation Districts, the USDA Forest Service, and the Environmental Division of the MCPB in November, 1979. This is a valuable land management document and should be the prototype for future land management reports for other agricultural areas.
- Preserve and improve the water quality and quantity of streams in the Agricultural Preservation Study Area and reduce the harmful effects of flooding, erosion, and sedimentation by requiring that new development within the proposed growth areas of Clarksburg and Damascus be channeled and phased in accord with a comprehensive watershed management program.

BETHESDA CBD SECTOR PLAN

Adopted June 1976

Amended November 1982

(Starting on Page)

STAGING PROCESS

The Stage I area, which includes all properties within the existing CBD-3 Zone, remains unchanged from the 1976 Plan as amended in 1980. (See Figure 5, Staging Plan.) The Stage II area is shown in Figure 5. The general boundaries are Old Georgetown Road (north), Arlington Road and future Woodmont Avenue (west), Hampden Lane, Bethesda Avenue and Willow Lane (south), and 47th Street and Waverly Street (east). Also included in the Stage II area are properties in the northeast portion of the East-West Highway/Wisconsin Avenue intersection. The Stage III area includes all of the CBD-2 area not included within the Stage II area. In the Stage IV area, which includes the CBD-1 area, only optional method applications with 80 percent or more residential floor space are approvable under this Amendment.

Because development capacity is limited, those sites within the Stage II area (see Figure 5, Staging Plan) which are ready will receive an early allocation of trips. The allocation process requires that they move into development within the time limits specified in the zoning ordinance. If properties in the Stage II area do not develop, this Amendment recommends that trip allocations become available to properties in the Stage III area. The same use mix guidelines would apply. The opening of Metro is to be the cut-off point for the Stage II area sites to apply for optional method approval; any remaining unallocated trips could then be granted to properties in either the Stage II or Stage III areas. Projects in the Stage II area containing 25 percent residential floor area and projects in the Stage III area containing 30 percent residential floor area will be given priority for approval in the Stage II time period (before Metro opens). Furthermore, any optional method project containing at least 80 percent of the floor area in residential use may be approved at any time and at any place within the CBD.

This Amendment places a limit on when property owners may apply as described below under Optional Method Administration Procedure. Applications will be processed and optional method approvals shall be granted until the trip allocation for office/retail uses is exhausted. If the total requested trips for office/retail development in the center exceed trip allocations during the first 210 days after adoption of this Amendment, applications will be judged based upon comparative merit as defined by the Standards for Comparison, which appear later in this report.

ALLOCATION PLAN

The Plan Amendment allocates 2,100 trips to specific uses or mixes of uses within the Bethesda CBD Study Area. Any new development committed after January 1, 1982 will be subtracted from the 2,100 trips. The approval of new development shall be limited by the maximum trips allocated, as shown on Table 1. The uses shown on Table 1 are a guide to the use mix which could be approved within the maximum trips allocated.

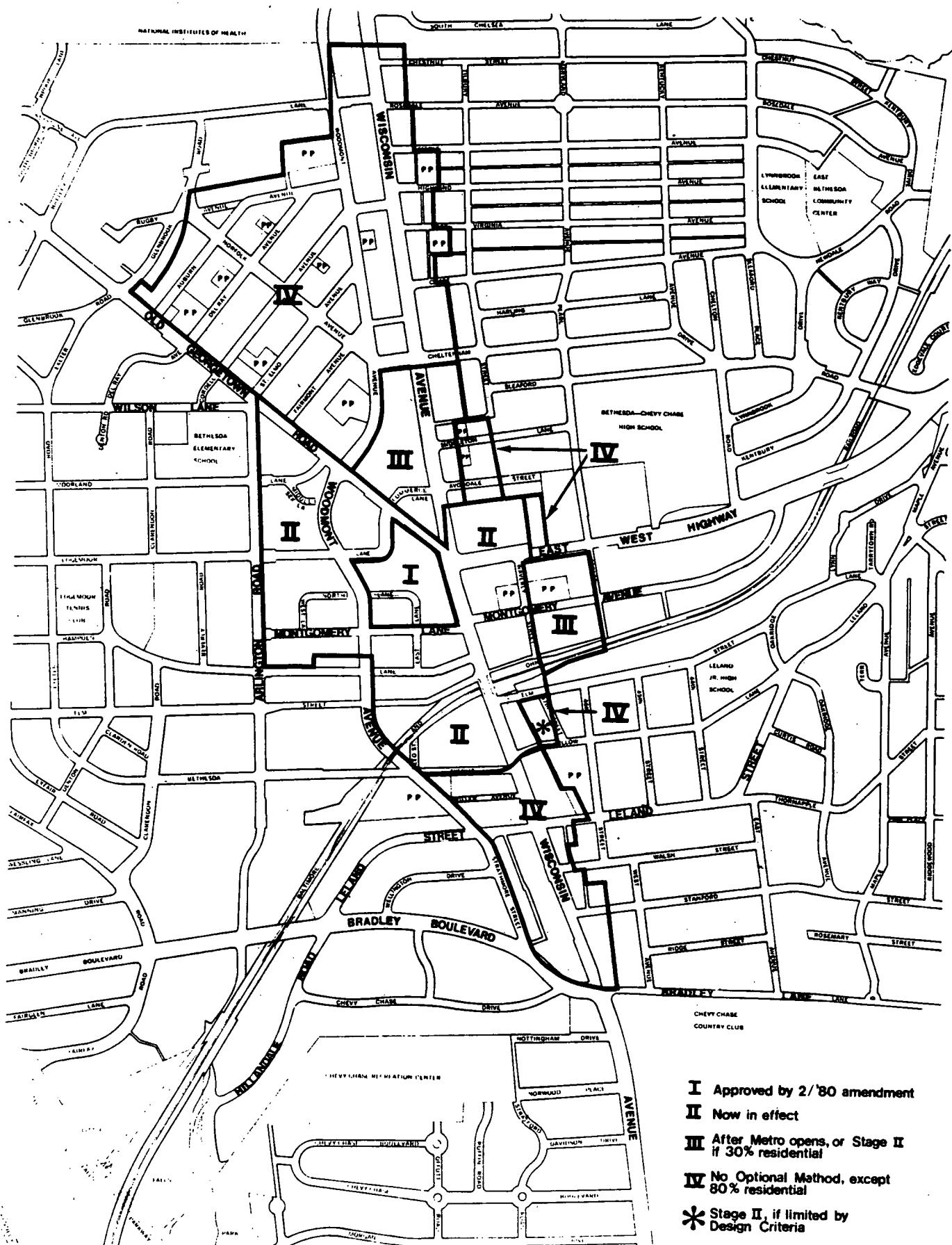
The Plan Amendment recognizes that some development under the standard method will take place in the Bethesda CBD Study Area. Accordingly, 200 trips are set aside for this purpose. Since such development may build by right, use of more than the 200 trips would reduce the trips available for the office/retail development category. (See Table 1.)

A minimum of 225 trips are allocated for residential projects in the Bethesda CBD Study Area. Projects containing 80 percent residential floor area can be approved in any CBD Zone. Residential trips from mixed use projects will be taken from the residential allocation. Additional projects (having at least 80 percent residential floor area) which exceed 225 trips may be approved. Such approvals will reduce the trips available for the office/retail development category.

The office/retail mix of uses, anywhere in the Stage II area, can accommodate 1,675 allocated trips. Projects shall generally conform to the desired use mix (in floor area) of 88 to 100 percent office and up to 12 percent retail. The Planning Board will determine retail floor area on a case-by-case basis. Any property in the Stage III area is eligible for optional method approval in the Stage II time frame, if approximately 30 percent (1.2 FAR) or more of the project is residential. Such projects should generally provide up to 12 percent (0.5 FAR) retail and the balance in office use. A small increase in the office or retail amounts may be approved if residential unit sizes result in more than 45 units per acre.

The suggested use mixes shown on Table 1 and in Appendix C are intended to provide general guidance. The Planning Board may approve variations from these amounts when: (1) proposed uses, especially residential, contribute to the general objective of increasing vitality and after-hours activity in the CBD, and (2) the use mix would not result in substantially greater trip generation than shown for each block in Table C-1...

Applications for optional method development for projects in the Stage II area that contain 25 percent or more of total project floor area in residential use (a minimum of 30 percent is required in the Stage III area) will be given priority and will be exempt from the review period requirements. Such projects will be accepted at any time after Commission adoption of this Plan Amendment, and may be approved by the Board at any time. Furthermore, it is the intent of this Plan Amendment that projects in the TSR area shall be eligible for zoning amendment and site plan approval in the Stage II time period.



Amendment to the Sector Plan - November, 1982

BETHESDA CBD

8

FIGURE 1

STAGING PLAN

- I Approved by 2/80 amendment
- II Now in effect
- III After Metro opens, or Stage II if 30% residential
- IV No Optional Method, except 80% residential
- * Stage II, if limited by Design Criteria

TABLE 1
BETHESDA CBD STUDY AREA
ALLOCATION BY USE SHOWING SUGGESTED USE MIX

Development Category	Use Mix	Floor Area Square Feet	Dwelling Units	Trips Allocated
STANDARD METHOD				
Office	(75% est.)	111,276		128
Retail	(25% est.)	<u>37,092</u>		<u>72</u>
Subtotal		148,368		200
RESIDENTIAL¹				
Residential	(80-100%)	1,606,369	1,444	179
Office	(10% est.)	31,415		18
Retail	(10% est.)	<u>35,920</u>		<u>28</u>
Subtotal		1,673,704		225
OFFICE/RETAIL²				
Office	(88% min.)	1,183,936		1,362
Retail	(12% max.)	<u>161,446</u>		<u>313</u>
Subtotal		1,345,382		1,675 ³
SUMMARY OF USES⁴				
Residential		1,606,369	1,444	
Office		1,326,627		
Retail		<u>234,458</u>		<u>—</u>
Grand Total		3,167,454		2,100

¹ Floor area calculations reflect site specific use estimates shown on Table C-2, Appendix C.

² Office/retail trips may be allocated for those sites in the Stage III area that provide a minimum of 30 percent residential.

³ Only 1,175 of the 1,675 trips will be authorized absent a personalized ridesharing program. In that case, the Grand Total would be 1,600 trips.

⁴ Building demolitions are likely to result in additional square footage. Trips associated with demolitions will be included in the trip calculations for each site approved.

BOYDS MASTER PLAN
Adopted May 1978
(Starting on Page 37)

SEWERS

The existing sewer situation in Boyds is less than adequate and presents some special problems which must be solved if the town is to continue as a viable community. Although the majority of homes have working septic systems, there are several which totally lack indoor wastewater facilities. There have also been a number of instances when existing systems have failed.

A standard sewer system using large diameter pipe and a gravity flow process involves a substantial cost to provide a wastewater treatment system to a community, especially in a rural area where the houses are not immediately adjacent to one another. This high installation cost usually renders central collection systems in rural areas infeasible.

However, the use of a pressure system which utilizes small diameter plastic pipe provides an excellent alternative solution. Installation of this system involves connecting the existing house wastewater line to a Sewage Grinder Pump (SGP) unit which shreds waste and pumps it through small diameter plastic pipes which replaces a conventional sanitary sewer line. The existing septic tank remains connected and is used as an emergency overflow tank. Using this approach, the staff of the Montgomery County Office of Community Development has developed a possible cost-effective approach to this type of sewer system.

Basic components of the system are the pump-storage-grinder unit consisting of a master pump, grinder, check and relief valves and control tap; a concrete storage tank; plastic effluent pipe; and a failure alarm. The system requires 20 amp, 110 volt electrical service with the piping and pump storage grinder installed below the frost line to prevent freezing.

The collection system consists entirely of small diameter pressure lines which range in diameter from $1\frac{1}{4}$ to 3 inches, combined with storage-grinder-pumps which can be designed to serve single, dual or multiple dwelling units. By locating the storage-grinder unit so that it serves more than one home, the cost per dwelling unit can be reduced.

Treatment is handled by a batch aerobic treatment unit. This treatment unit consists of a single container in which aeration, sedimentation and decanting of treated effluent are accomplished. The operation cycle would include more than 20 hours of aeration, 3 hours of sedimentation and 30 minutes decanting of the effluent, all of which is automatically controlled. The small amount of sludge which accumulates in the tank can be removed by pumping and hauling as necessary to designated WSSC septic tank pumpage acceptance sites. Sludge removal would be necessary perhaps twice annually.

The size of treatment facilities is based upon information regarding waste flows in rural areas. It has been well documented that rural water usage in homes with water consumptive fixtures and appliances is slightly more than 40 gallons/ person/day. Because Boyds will have the advantage of water from the extension of the WSSC system, it has been assumed that water usage may be slightly higher than if it were supplied by wells. For this reason, calculations to determine the feasibility of this system for Boyds used a figure of 50 gal/day/person.

The basic components of the recommended wastewater disposal system are relatively simple. These components would include secondary treatment through the batch-aerobic process followed by land irrigation. Secondary pre-treatment is necessary to comply with Maryland criteria prior to disposal on land. Use of aerobic secondary processes, is also necessary to enable nitrification to occur in the partially treated wastes. This is beneficial prior to land irrigation to prepare the waste for nitrogen removal by denitrification which occurs in the soil.

The secondary treatment units necessary for this alternative are readily available manufactured units which require no special fabrication or components. The secondary treatment unit can be placed in the ground and the entire system blended into the natural environmental setting.

Overall, this system represents a feasible and innovative approach to rural communities having problematic soil conditions and a small volume domestic wastewater flow.

This system is competitive with and less costly than a WSSC extension while accomplishing the objectives that are of vital importance to the future of this and other rural communities. Important aspects of this system which are critical to both the system and the plan are:

- Providing a disposal system that has a limited capacity for future growth, thus protecting the character of the community by maintaining its low density and following the goals established by the Rural Zone and the General Plan for rural areas.
- The establishment of a sewerage system will provide the town with the growth potential necessary to sustain the needs of its growing population and provide support for its existing and proposed community facilities.

STAGING

In order to address the most severe sewage needs in Boyds first and to ensure that the implementation of the recommended system is not undertaken without sufficient community support, the proposed service area is divided into two stages. Since the problems are generally more severe south of Route 117, it is anticipated that this section will be constructed first with the northern portion of the planning area to be served at a later date. The full-size treatment facility and disposal site will be developed along with the stage 1 collection system. Thus when stage 2 is ready for inclusion in the sewerage system, all that will be required is the installation of the collection system and the connection to the 3" pressure sewerline at the northern point of White Grounds Road.

Implementation of this recommendation shall proceed only after 60 percent of the existing users within either stage 1 or stage 2 demonstrate their willingness to connect to this system by filing a petition with the Montgomery County Office of Environmental Planning and/or the County determines that a public system is required to safeguard the public's health.

In the event that no petition is filed prior to the adoption of the FY-1981 Ten-Year Water Supply and Sewerage Systems Plan, the Planning Board will reconsider all master plan elements which are contingent on the construction of the public water and sewer system.

CLARKSBURG MASTER PLAN

Adopted September 1968

(Starting on Page 16)

INFLUENCES ON FUTURE GROWTH

...

Another problem is the absence of public services, due to the small current population. The use of wells and septic tanks is becoming increasingly unsatisfactory as population density increases, because the area's rocky geologic structure and impermeable soil encourage the mixture of septic tank effluent with well water and could, eventually, create a major health problem. Lack of sewers acts as a deterrent to economic growth and restricts choice in site selection for development. Public services are needed to improve rural roads, and Interstate 70-S is already overcrowded in peak hours as far north as Germantown. Secondary schools, playfields, a library, a health center, and police and fire facilities are absent.

...

(Page 22)

IMPLEMENTATION OF THE PLAN

Putting the Plan for Clarksburg into effect will involve a number of different public programs. The most important of these will be the administration of the Zoning Ordinance and Subdivision Regulations and the construction of roads, sewerage and water supply systems, and other public works.

Staging

The Zoning Ordinance will be a principal control over private land development in the Planning Area. A process of rezoning must inevitably take place in Clarksburg, as it must in all areas undergoing rural-urban change. A method or system for orderly zoning change must be evolved. This could consist of an explicit series of criteria for rezoning to any of the districts in the Zoning Ordinance. These criteria would be concerned with such factors as the capacities of existing and programmed sewerage, water supply, and road systems, schools, and other public services, in consideration of soil conditions and capabilities and compatibility of the proposed development with its surroundings. These criteria should be developed on the basis of experience with traffic-generating characteristics of development in zoning districts, with projected water use and sewage discharge by different types of development, with soil conservation practices, and with other relevant factors. They should be explicit in order to guide the Planning Board and the County Council in rezoning decisions and to provide prospective developers with a correspondingly explicit statement of the County's policy on land development. Although much of the knowledge needed for deriving such criteria now exists, it has not yet been organized in usable form; this should be a continuing subject of research by the Commission staff.

DAMASCUS MASTER PLAN

Adopted June 1982

(Starting on Page 44)

PROPOSED IMMEDIATE ROAD IMPROVEMENTS: DAMASCUS BUSINESS DISTRICT

- a. Extend the eastbound through lane, in front of the bank, back around the curve on Route 27 southward to Damascus Boulevard. This improvement will make both eastbound lanes accessible during the P.M. peak hour. Right lane is now intermittently blocked by standing vehicles.
- b. Extend the southbound right turn lane on Route 27 from the fire house northward to a point opposite the old Woodfield-Ford garage. This improvement will permit operation described in e. and f. below.
- c. Construct a 24 foot 2-lane open section road from the existing entrance to Damascus Center at Route 27 westward to intersect radially with the existing curved paving on Lewis Drive (this road is referred to as Ridge Road-Lewis Drive connector). This improvement will provide an alternate route through the business area.
- d. Re-stripe and install appropriate signs to create two eastbound lanes on Main Street at Ridge Road with left turn mandatory from the left lane and optional from the right lane. This will reduce the time required for eastbound traffic to clear the intersection during its green cycle.
- e. Re-stripe Ridge Road north of Main Street to create two northbound lanes and one southbound lane as far as the entrance to the shopping center.
- f. North of the above intersection merge the two northbound lanes into one. Additional capacity is not recommended beyond this point. Capacity will be provided to the east by A-12.
- g. Beginning opposite the furniture store (former Woodfield garage) on the west side of Ridge Road, stripe the paving so as to provide a southbound free right lane and a central through-left turn lane approaching the intersection of Ridge Road-Lewis Drive connector.

This new intersection should be clearly marked so as to direct southbound Route 27 traffic to turn right at this point and proceed via Lewis Drive rather than turning right at Main Street. (Operation should be observed to determine need for a future signal). Right and left turns would still be allowed at Main Street to serve local needs.

- h. Extend the widening of Main Street adjoining the entrance to the Damascus Center westward to meet the very short right turn lane now existing just east of the intersection at Ridge Road.

Improvements "a" through "h" are recommended to be included in the state's "Special Projects" program.

- i. To improve safety, parking on the south side of Main Street east of the intersection with Ridge Road should be removed to an off-street location or, at least, converted from a diagonal to parallel pattern.

The items described under "Proposed Immediate Road Improvement: Damascus Business District" represent the first stage of a public improvement package which this Plan proposes in order to provide capacity to handle anticipated traffic increases in the near future. The entire improvements package is described in Proposed Business Area Roadway Improvement Map. This Plan recommends that these improvements be included in the State Highway Administration's "Special Projects" programs as quickly as possible. These improvements are calculated to raise the level of service from "E" to "A" at the intersection of Routes 108 and 27 during P.M. rush hour.

To accommodate the additional traffic that is expected along Woodfield Road (Md. 124) in future years, particularly when the Shady Grove Metro station opens, Woodfield Road should be extended north of Route 108 to Ridge Road. This link, coupled with improvements to the Ridge Road - Route 108 intersection, would distribute through traffic over several roads and would greatly reduce rush-hour congestion. This Plan recommends that Woodfield Road intersect Ridge Road south of Faith Lane and that Faith Lane be relocated to intersect with Woodfield Road extended rather than Ridge Road. Further capacity, if needed, could be attained by adding another lane to Woodfield Road between A-11A and Main Street.

As noted, the State Highway 20-Year Needs Inventory recommends reconstruction (widening) of Route 27 to relieve future congestion. This Plan has explored the possibility of constructing a parallel road west of Md. 27 (between Gue Road and Md. 80) to provide additional capacity. The cost of acquiring a right-of-way and building 9000 linear feet of roadway is estimated to be \$2.8 million. The estimated cost of adding one or two lanes to Route 27 ranges from \$450,000 to \$780,000. This Plan therefore endorses the idea of reconstructing Route 27 within the present right-of-way north of Faith Lane rather than building a new road paralleling Route 27.

Arterial roadways usually are obtained by dedication during the subdivision process and are usually constructed with private funds. Driveway access to arterial roads can be controlled in accord with subdivision regulations, thereby assuring high capacity and smooth traffic movement.

Primary roadways provide internal circulation within a subdivision or neighborhood. Although the Transportation Plan shows proposed locations for primaries, the final location is determined at time of subdivision. Primary roads may also be deleted or added at time of subdivision.

1	Construct 2-lanes @ \$225.00/ft.	=	\$2,300,000
	+ 20% engineering costs	=	\$ 500,000
	R-O-W @ \$500/acre	=	\$ 80,000
			<u>\$2,880,000</u>

IMPLEMENTING PROPOSED TRANSPORTATION IMPROVEMENTS

Table 5, Staging of Road Improvements in Damascus, places a priority on road improvements and identifies how they would be implemented.

PUBLIC TRANSIT

The Damascus area is not currently served by public transportation. Current planning and financial studies being conducted by the Washington Metropolitan Area Transit Authority, with input by Montgomery County, include a proposal to extend Metrobus service to Damascus. The proposal is being made for purposes of analysis as part of a 10 year projection of budget impacts of Metro transit services. The results of the study, which are not yet available, will indicate the patronage demand and costs associated with the proposal. The proposal specifies 30 minute peak-only headway between Damascus and the Shady Grove Metrorail Station. Service of that nature would most likely be implemented, if warranted, some time at or soon after the opening of the Shady Grove Line late in 1983.

Informal commuter parking for 30 cars is occurring every business day near the church north of the intersection of Md. 80 and Md. 27 at Claggettsville. If public funds become available for commuter parking in Damascus, sites north of the business area should be considered to reduce congestion at Ridge Road and Route 108. One possibility which should be explored is leasing a church parking lot during weekdays.

Sewer Service Areas

Densities proposed in the Magruder Valley will be served by existing community sewer and water systems. The major implementation issues regarding public sewer are:

- How should existing treatment capacity be allocated to implement land use proposals in this Plan. Should the present sewage treatment allocation system for Damascus be abandoned?
- What are the alternatives for providing additional sewage treatment capacity?

Although community sewerage facilities in the Damascus area are owned and operated by the WSSC, the Damascus system has its own sewage treatment plant which is completely separate from other WSSC sewerage facilities in Montgomery County. Most of the existing service area (see map, page 103) lies within the Magruder Valley between Routes 27 and 124. There are two pumping stations serving areas outside of the Magruder Valley, one for the Damascus Shopping Center and one for Spring Garden Estates (known as pump station "D"). The major interceptor follows Magruder Branch from its headwaters near Route 108 south through Damascus Regional Park to a pumping station located near Welsh Road. The sewage is then pumped a short distance to the sewage treatment plant which is located in the park.

The Damascus Sewage Treatment Plant was built in the early 1970's and upgraded in 1978 from secondary to advanced wastewater treatment. It has a design capacity of 750,000 gallons per day. The average monthly flow for 1980 was only 123,000 gallons per day.

TABLE 5
STAGING OF ROAD IMPROVEMENTS IN DAMASCUS

Item	Cost (1981 Dollars)	Effect	Implementation
1. a. Complete westbound lane on north side of Main Street	\$ 60,000	Critical lane volume reduced at Main St. and Ridge Rd. from 1476 to 1110.	State Highway Administration "Special Projects" program.
b. Eastbound lane on south side of Main St. approaching Ridge Road	<u>\$ 50,000</u> \$ 110,000 total	(Level of service E to B)	
2. a. Construct Ridge-Lewis connector	\$ 150,000	Critical lane volume reduced at Main and Ridge from 1110 to 927.	Montgomery County or State Highway Administration.
b. Complete paving and re-stripe Ridge Rd. from Main St. north to connector	<u>\$ 40,000</u> \$ 190,000 total	(Level of Service B to A)	
3. Extend Woodfield Rd. north of Main St. to Ridge Rd.	\$1,300,000 total	Will divert 310 Westbound and 113 Eastbound vehicles per hour from Main St. and from Ridge Rd. north of Main St. to limit of extension. <u>Note:</u> As traffic on Woodfield Rd. and Rte. 108 grows, these figures will increase.	Montgomery County and private developers.
4. Widen Md. 27 north of A-12 to Claggettsville (adds two lanes).	\$ 780,000	Would carry future increased traffic.	State Highway Administration.
5. Extend Bethesda Church Rd. to Woodfield Rd.	\$ 500,000	Would serve new development. Could divert maximum of 50 eastbound and 50 westbound vehicles from Main St. during the P.M. peak hour. Probably fewer diversions if items 1 and 2 have been completed.	Private developers.
6. Hold A-11-A right-of-way (M-27 on 1966 Plan) for future use in connection with the extension of Woodfield Road north of Main Street.		Could divert northbound through traffic from intersection of Main St. and Ridge Rd. to Woodfield Rd.	State Highway Administration.

Source: MCPB staff. Costs are estimates only.

Allocation Policy

Capacity in the Damascus Sewage Treatment Plant is allocated under a policy established by the County's FY 1978-1987 Comprehensive Water Supply and Sewerage Systems Plan. The Executive's proposed FYs 1981-1990 plan update has recommended the transfer of some commercial allocation to residential and the use of more recent unit flow factors. The allocations which would result from the policy as amended are given in Table 8.

This table shows that nearly all of the allocation for new residential development has been committed. This is significant, given the fact that actual flows at the treatment plant are only 16 percent of the design capacity. Even based on the current Planning Board high growth forecast, the existing treatment capacity should be adequate to support the population expected in the year 2000. The allocation policy does provide for the "recapture" of commitments in cases where units have not proceeded to construction within one year (the County is considering a change to 18 months). It appears that a number of commitments could be recaptured on this basis if a "waiting list" for sewer ever occurred.

Several recommendations of the Plan may increase the "waiting list" for sewer:

1. The Plan recommends 345 acres of the land that flows by gravity to Pump Station "D" be zoned for one house per 2 acres. Sewer service should be provided to encourage clustering away from Little Bennett Creek.
2. Two areas proposed as TDR receiving areas are recommended for a base density of one house per 2 acres.
By participating in the TDR program, developers would be eligible for a density increase to 2 houses per acre (half-acre lots) and public sewer.
3. Approximately 213 acres south of Damascus Regional Park are proposed as a TDR receiving area. The base density proposed is one house per 2 acres without public water or public sewer. To encourage the transfer of development rights, a TDR density of 1 house per 1 acre with public water is proposed. Sewer service is not recommended.

Estimates are shown in Table 9 of the amount of treatment capacity needed for each proposal.

This Plan proposes that development in the vicinity of Pump Station "D" and the two proposed TDR receiving areas be eligible for public sewer in accord with County allocation and recapture policies. Sewer service for the Business Area Expansion east of Damascus Shopping Center should only be programmed if this site is selected as the preferred location for a new shopping center.

Whether this present allocation policy should be retained or abandoned will be explored with County staff as part of Plan Implementation.

TABLE 8
DAMASCUS SERVICE AREA ALLOCATION SUMMARY

Category	Sub-Total	Flow (gpd)*	Total
1a. Health Problem Areas Due to Failing Septic Systems			21,000
1b. Potential Future Health Problem Areas			66,850
2. Public Facilities			
Public Schools			
(a) Damascus Elementary	4,428		
(b) Baker Junior High	4,088		
(c) Damascus High	7,920		
(d) Woodfield	2,064		
Library Facilities	500		
Fire Facilities	500		
Subtotal			19,500
3a. Existing Commercial Area	33,300		33,300
3b. Future Commercial			
Currently Allocated**	3,272		
Currently Unallocated**	26,128		
Subtotal			29,400
4. Residential Development			
Currently Allocated (including existing hookups)**	553,370		
Currently Unallocated**	26,580		
Subtotal			<u>579,950</u>
TOTAL			750,000

* gpd = gallons per day

** As of September 9, 1981

Source: Proposed FY's 1981-1990 Comprehensive Water Supply and Sewerage Systems Plan; Washington Suburban Sanitary Commission.

TABLE 9
PROPOSED ADDITIONS TO
EXISTING SEWER SERVICE AREA

Area	Acres	Potential No. of Houses	Estimated Daily Sewage Flows (Houses x 350 Gals.)	Comments
Pump Station "D"	283	At 1 per 2 acres: 141 plus 97 potential homes on existing lots. 141 + 97 = 238	83,300	With minor modification, Pump Station "D" appears adequate to accom- modate these sewage flows.
Ridge Road TDR Receiving Area A	91	At 2 per acre (TDR density): 182	63,700	
		At 1 per 2 acres (without TDR): 45	15,750	
Woodfield Road TDR Receiving Area B	126	At 2 per acre (TDR density): 252	88,200	
		At 1 per 2 acres (without TDR): 63	22,050	

Providing Additional Treatment Capacity

The possibility of obtaining additional sewage treatment capacity is uncertain at this time. Any expansion of the existing treatment plant is dependent upon the assimilative capacity of Magruder Branch and would be expensive due to the level of treatment required. Other alternatives include land treatment or small, package treatment plants. Eventually, it is anticipated that an interceptor will be extended up the Little Seneca Creek from the main WSSC system serving the developed areas of Montgomery County. It would then be possible to pump Damascus flows over to this line and phase out the Damascus treatment plant if desired. This extension is not expected to occur, however, until Clarksburg develops, which is not forecast for another 15 or 20 years.

The issue of additional treatment capacity will be addressed in a WSSC Damascus sewerage facility plan which has been included in the County's proposed FYs 1982-1987 Capital Improvements Program. This facility plan will consider the sewerage needs of master plan land use alternatives. At this point, Planning Board staff question the need to pursue new treatment capacity solely for the purpose of providing additional commitments, considering that the existing treatment plant should be adequate to handle actual flows through the year 2000.

The Land Use Plan does recommend an area east of Damascus Shopping Center for a Planned Development at 5 units per acre. However, until additional sewer capacity is available, this land should remain RE-2C (one house per 2 acres) without sewer service.

Planned Facilities

The only new sewerage facilities planned for the Damascus area at this time are an expansion of the pumping station serving the shopping center (Project S-94.03) and the installation of individual grinder pump systems on Locust Drive and Lewis Drive. The shopping center pumping station (known as B') is being upgraded to serve the health problems in the nearby Beall Avenue area. It will serve 57 existing and 12 future residences, plus the existing shopping center.

The grinder pumps will be installed at 25 houses on Lewis Drive and 11 houses on Locust Drive. Sewage from each house will be ground up and pumped through a small diameter plastic pipe to the ridge line where it will connect to the existing sewerage system. A conventional pump station had previously been planned for this area but it was determined that the grinder pumps would be a more cost-effective approach for serving this health problem area.

EASTERN MONTGOMERY COUNTY MASTER PLAN

Adopted November 1981

(Starting on Page 219)

TABLE 15
PROPOSED WATER PROJECTS

Project Number	Project Name	Estimated Remaining Project Cost (\$000)	Project Description
W-113.05, W-113.07 & W-113.08	Colesville Water Line	468	4,100 feet of 30 inch water main southeast of Good Hope Road.
W-80.08	Potomac Supply to Prince George's County	2,676	12,450 feet of 120 inch water main.

Source: FY 83-88 CIP

As shown on Figure 48, much of eastern Montgomery County has existing sewer service. The Ten-Year Plan proposes that nearly all of the planning area be served within the ten year period except for the following areas:

- the Patuxent River watershed;
- an area north of Greencastle Road and east of Route 29; and
- an area north of Norwood Road and west of New Hampshire Avenue.

The Ten-Year Plan included two proposed relief sewers and one new major sewer in the Anacostia basin. These projects are shown on Figure 8, and described in Table 16. The Northwest Branch relief sewer was developed on the basis of earlier population forecasts. Neither the county nor the region have grown as fast as expected and indications are that growth will continue to be slower than previously projected. The Sewer Evaluation System model (SES), a computer model which evaluates sewer system capabilities, indicates adequate transmission capacity for the Northwest Branch sewer until the year 2000. The CIP identifies Project S-91.02, Northwest Branch Sewer Facility Plan, to examine future needs in the sub-basin and determine whether construction of the project is necessary.

The second proposed relief project is the Paint Branch relief sewer. The Maryland Department of Natural Resources has delayed this project until the Eastern Montgomery County Master Plan is completed. A portion of this relief sewer has been placed on the "dependent project" list in the CIP. This means that it will not be built until there is further indication that the project is needed. Construction of a sewer line in Paint Branch could endanger the trout fishery. The CIP contains funds for Project S-33.05, Paint Branch Sewerage Facility Plan, to analyze replacement sewer, relief sewer, or pumping station needs. The Project also will address environmental effects of construction of a sewer line in Paint Branch.

The proposed new University of Maryland Plant Research Farm interceptor, Project S-33.02, will be built to serve the major employment center to be constructed on that 330-acre site.

Figure 49 illustrates the priorities of this master plan for the future provision of water and sewer service. In general, the priorities shown on Figure 49 correspond with the water and sewer service categories in the Ten-Year Plan. Priority one would be equivalent to categories W-3, W-4, S-3, and S-4; priority two to W-5 and S-5; and priority three to W-6 and S-6 (no planned service). The timing, however, will depend upon future highway improvements discussed below in the Transportation section. In areas with little remaining highway capacity, changes to the existing sewer service categories generally will not be approved until additional highways are programmed in the CIP. The link between sewers and roads is intended to keep new development -- and its impact on public facilities -- in scale with the capacity of the facilities to serve the development. Once the highways are programmed, water and sewer service can be provided in accord with the priorities shown on Figure 49.

TABLE 16
PROPOSED SEWER PROJECTS

Project Number	Project Name	Estimated Remaining Project Cost (\$000)	Length and Diameter of Lines	Capacity mgd*
S-33.02	University of Maryland Research Farm Sewer	216	2,000 ft. of 27 in. 4,200 ft. of 18 in. 2,100 ft. of 15 in.	5.6
S-33.03	Paint Branch Relief Sewer (dependent project)	--	1,720 ft. of 27 in. 7,100 ft. of 24 in. 2,855 ft. of 21 in.	17.8
S-33.05	Paint Branch Sewerage Facility Plan	75	--	--
S-91.02	Northwest Branch Sewer Facility Plan	--	--	--

* mgd = million gallons per day.

Source: Montgomery County FY 83-88 CIP.

The 1980 Comprehensive Staging Plan identified the Cloverly sub-area as one with very little remaining highway capacity. Water and sewer category change requests in this area in particular, therefore, will likely be denied, and service subsequently delayed, until the necessary highway improvements are made.

Sewer service also may be used as an incentive to encourage use of transferable development rights (TDR's). The area north of Greencastle Road, east of Route 29, shown as a TDR receiving area on Figure 31, should be changed to sewer category S-3 (priority 1 on Figure 49) in the event that development using TDR's is utilized. Such a category change would be considered simultaneously with the consideration of the development plan.

Land that is designated in an adopted master plan for automatic provision of sewer and water service upon assembly of transferable development rights shall be automatically changed from category S-4, S-5, or S-6 to category S-3 upon approval by the Planning Board of a preliminary plan of subdivision. The subject development must have passed the Adequate Public Facilities test and secured at least the minimum number of TDR's permitted to be used under the master plan designation.

TRANSPORTATION

The Comprehensive Planning Policies report recommends a "Stage One" limitation in 1982 of 1,351 net new dwelling units and 6,692 net new employees in the Fairland/White Oak and Cloverly "traffic sheds."⁶ Increases to these limitations would be contingent on planned highway improvements to Sandy Spring Road and Randolph Road east of Route 29 being at least 50 percent programmed for construction. Further development could be accommodated at a later time if the transportation improvements recommended by this master plan are programmed. Such improvements could include express bus service or transit service on exclusive or reserved lanes, as well as highway improvements recommended in this master plan.

Given the forecasted pace of growth for the area, the road improvements recommended in this master plan should be staged as follows:

Phase I, to 1990:

- Route 29, Stewart Lane to Briggs Chaney Road: 6 lanes, divided.
- New Hampshire Avenue, East Randolph Road to the proposed Intercounty Connector: 6 lanes, divided. If the Intercounty Connector is built, otherwise, 4 lanes, divided.
- Bonifant Road, Northwest Branch to New Hampshire Avenue including relocation to connect to relocated Good Hope Road: 2 lanes.
- Briggs Chaney Road, Route 29 to Intercounty Connector: 4 lanes.
- Briggs Chaney Road, remainder: eliminate "dog-legs" at New Hampshire Avenue and Old Columbia Pike, spot safety improvement elsewhere.
- East Randolph Road relocated, Route 29 to Prince George's County Line: 4 lanes.

⁶ Op. Cit., p. 87, pp. 52-53, and for the Patuxent watershed, staff estimates.

- Good Hope Road, New Hampshire Avenue to west of Blanton Road including relocation at New Hampshire Avenue: 2 lanes.
- Lockwood Drive, reconstruct intersection at New Hampshire Avenue.
- Randolph Road, reconstruct and resignalize intersection at New Hampshire Avenue.
- Sandy Spring Road, Route 29 to Prince George's County Line: 4 lanes divided.
- Fringe Parking Lots, construct White Oak lot, including access road, acquire land for Colesville (if needed), Fairland Road, and Burtonsville lots.

Phase II, 1990-1995:

- Route 29, Briggs Chaney Road to Spencerville Road: 6 lanes, divided.
- New Hampshire Avenue, Intercounty Connector to Spencerville Road: 4 lanes.
- The Intercounty Connector, in whatever form it is ultimately approved, should be built in this phase.
- East Randolph Road, New Hampshire Avenue to Route 29: 4 lanes, divided.
- Fairland Road, Randolph Road to Route 29: 2 lanes.
- Lockwood Drive, Route 29 to New Hampshire Avenue: 4 lanes.
- Old Columbia Pike, Route 29 to Intercounty Connector: 2 lanes.
- Old Columbia Pike, Industrial Parkway to Stewart Lane: 2 lanes.
- Fringe Parking Lots, construct Colesville (if needed), Fairland Road, and Burtonsville lots.

Phase III, beyond 1995:

- Route 29, Spencerville Road to the Howard County Line: 6 lanes divided.
- Decision on the Route 29 relocation and interchange at Burtonsville should be made.
- New Hampshire Avenue, north of Spencerville Road: 2 lanes.
- Briggs Chaney Road, entire length (except portion rebuilt in Phase I): 2 lanes.
- Fairland Road, Route 29 to Prince George's County Line: 2 lanes.
- Old Columbia Pike, Intercounty Connector to Spencerville Road: 2 lanes.
- Spencerville Road, through Burtonsville business district: 6 lanes, divided.

GAITHERSBURG & VICINITY MASTER PLAN

Adopted January 1971

Amended July 1982 (General Staging Element not effected)
(Starting on Page 41)

IMPLEMENTATION

STAGING

New residential growth in the Gaithersburg vicinity has been triggered by the establishment of several large employment centers along Interstate I-70S during the last decade. Other recent growth is due to the improvement of commuter trips to employment centers in the down-County and other areas in the metropolitan region since the completion of I-70S.

Some of this growth has occurred contiguous to the older development in the center of the City. Until sewers were installed in recent years in the Seneca Creek Basin, most development was confined to the Rock Creek Basin, plus the several small areas served by pumping stations to the west and south of the old town. With sewers now installed in Whetstone Branch, Great Seneca Creek, and a portion of Long Draught Branch, other development can now locate some distance away, in what are still rural surroundings. Therefore, it is no longer reasonable to expect development to expand outward in concentric rings from the old town center; rather, the response of development will be to the addition of new employment centers, the construction of additional highways, and the relative pricing of new housing, as compared with the cost and convenience of commuting to job locations elsewhere.

Public policies and actions have been highly favorable toward the encouragement of development in the corridor cities. Because of the open character of the area, it is possible to acquire highway and utility rights-of-way and sites for public facilities, with relative ease and minimum costs as compared with the more developed sections of the County. The County's program for the Medical Center calls for increased amounts of private housing in that area. The decision to forego any expansion of the Airport assures nearby areas that heavy or jet aircraft will no longer be a threat to the environment in that vicinity and that additional amounts of low-density development will be possible. Clearly, the interest of balanced growth calls for continued public policy favoring continued development in this corridor city.

It is the general policy of the County to rezone for higher intensities only when adequate transportation and other public facilities are completed or are firmly scheduled for adequacy status by the time the proposed development on new zoning will occur. Particular care should be exercised to assure that the timing of high-density development in the area surrounding the proposed interchange of the Outer Beltway with I-70S is co-ordinated with the timing of construction of the Outer Beltway.

GERMANTOWN

Adopted January 1974

Amended September 1979

Non-staging Amendment December 1982

(Starting on Page 67)

STAGE ONE

This development stage can be rather precisely delineated. It pertains to existing dwellings and/or other structures which are expected to remain and to those areas which have outstanding authorizations for sewer. Those areas have a potential for 5,700 units (see Exhibit 20).

STAGE TWO

This stage will commence, regardless of the state of development in Stage One, when additional sewer treatment capacity becomes available.

The sewer service program, therefore, should be extended as recommended in this Amendment (see Section 4.53 and Exhibit 24). This will require amendment of the Comprehensive 10-Year Water and Sewerage Plan to permit a more detailed program of service extension to areas smaller than an entire drainage basin. Limited-access sewers will also be required in some areas to avoid opening more land to development than called for in the periodically revised development program for Germantown.

Based on expected rates of development this Master Plan Amendment recommends that the second stage of private development should permit a maximum of 11,500 additional dwelling units. This figure may be revised, based on development experience, market forecasts, and capital improvements scheduled by the time development begins in this stage. Assuming that Stages One and Two, together, will extend for about the first ten years of development, this will allow "room" for more than twice as much population as is predicted for Germantown in this period. This wide margin is recommended to allow for competition and in recognition that, for a variety of reasons, not all owners will be ready or able to develop within that time frame. Development in this stage can commence only when major additions to sewer treatment capacity are made. This area should be included in the comprehensive sectional map amendment enacted immediately following the adoption of this Comprehensive Amendment to the Master Plan for Germantown, however, to allow preliminary development approvals, such as applications for rezoning to the Planned Development Zone and for preliminary subdivision approval, to proceed.

The Stage Two development envelope should be extended to allow development to continue apace, primarily in the Churchill, Gunners Lake, and Middlebrook Villages. This land, as delineated on Exhibit 20, is currently held in 46 separate ownerships. All the areas in Stage Two are close to I-70-S and other existing improvements; are in proximity to the town center; and, importantly, are all located upstream from proposed storm-water management facilities indicated in the Seneca Creek Watershed Study or from facilities to be provided by the County or the developers, in accordance with the standards developed through the ongoing Countywide storm-water study. Also, these areas do not require major sewer trunk line extensions in excess of any required for the Montgomery College campus.

Programming for public facilities, therefore, should initially be concentrated in these three villages and in the sequence described in this Amendment. These facilities include the Germantown campus of Montgomery College, proposed for Middlebrook Village. Each neighborhood developed should be served by an elementary school.

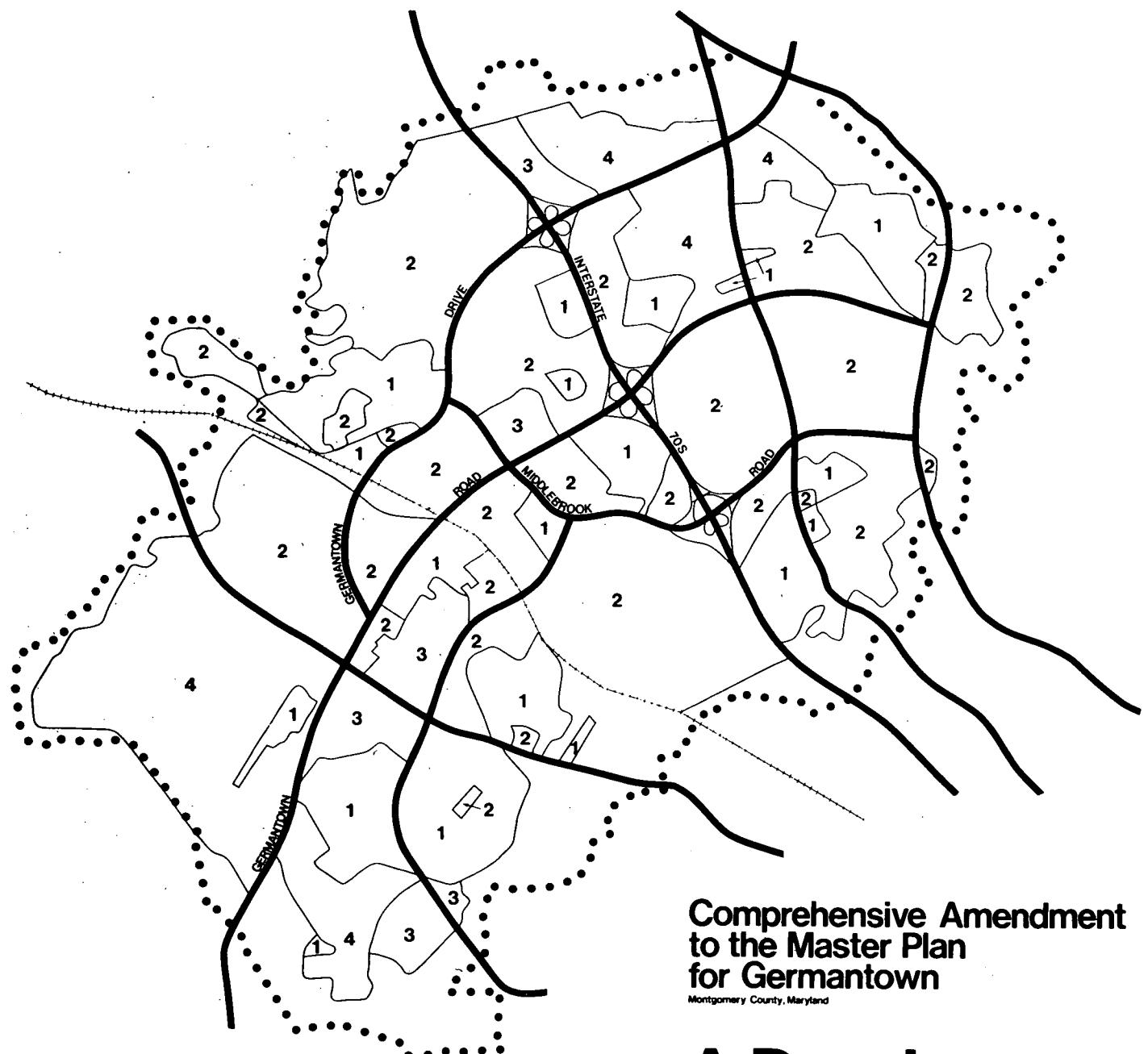
Every effort should be made to program public facilities at the earliest possible time. Sewer and transportation facilities should also be provided concurrently. This relates particularly to a quadrant formed by Maryland Route 355, the Eastern Arterial, Middlebrook Road extended, and M-61. This quadrant should be placed in Stage Two. It is the intention of the Master Plan that the timing of this quadrant be governed by the availability of adequate service from the Eastern Arterial and Maryland Route 355. Consequently, the point in time that this area should be scheduled for sewer service in the Comprehensive Ten-Year Water and Sewerage Plan should be adjusted so that development will be possible at the time transportation and sewer services are concurrently available. Thus, when the time for the construction of the Eastern Arterial has been determined or capacity is found to exist on Maryland Route 355, the Comprehensive Ten-Year Water and Sewerage Plan should be adjusted to provide sewer service at that time. Exhibit 24, a Proposed Amendment to the Ten-Year Sewerage Plan, depicts this area in the three-to-six-year period for sewer service, Category 11-B.

Similarly, the Staging Plan for the Germantown area must recognize the existence of an already approved subdivision in the Kingsview Village. This area, therefore, should also be designated for development in Stage Two; and the development should be contingent upon the application of adequate storm-water measures.

During Stage Two, construction for the village centers for Churchill and Middlebrook should be commenced and, possibly, the village center for Gunners Lake as well. Additional land may be developed to support the construction activities in Germantown. Some initial development in the central business district could also be included in Stage Two, but only on the basis of a comprehensive development plan, indicating the full extent and schedule of development. Rezoning for the central business district should be effected in a manner that will assure the integrity of this core area and will avoid the development of premature, non-center uses that should appropriately be located in village centers or other sectors of less intense development (see Section 3.62). Highway-related commercial activities in the town center should commence in conformance with the guidelines set forth in Section 3.61. Industrial development in Germantown should be expected to expand during this stage to accommodate about 10,000 employees. If this volume of employment occurs, the staggering of work hours may be necessary to ease peak-hour traffic at Maryland Route 118 and I-70-S.

The volume of private construction in this stage will require that the programming of roads keep pace with development. The second stage is predicated upon the construction of relocated Maryland Route 118 as a four-lane facility from Maryland Route 355 to Clopper Road, the widening of Maryland Route 355 to four lanes from Montgomery Village Avenue to relocated Maryland Route 118, the widening of Clopper Road to four lanes from relocated Maryland Route 118 south to Maryland Route 124, the widening of Middlebrook Road to four lanes from Maryland Route 355 to Maryland Route 118, the extension of Middlebrook Road from Maryland Route 355 to the Eastern Arterial, and the construction of the Eastern Arterial as a six-lane facility from Montgomery Village Avenue to Middlebrook Road extended. These projects should be placed in the Capital Improvements Program and/or the Maryland State Department of Transportation five-year construction program for development concurrently with the commencement of the second stage of private development.

"The Fifth Annual Growth Policy Report has identified that there are 5500 dwelling units with sewer allocations in the portion of Germantown west of I-270 and a remaining capacity in the road network for only 3000 more dwelling units. Thus no additional lots should be recorded in that area until the capacity of the highway network has been expanded. The County Council has accelerated the programming of the Western Arterial (M-90) called the Great Seneca Highway. This is a necessary improvement; however by itself, it is not sufficient. That portion of Maryland Route 118 between Middlebrook Road and Aircraft Drive must also be improved.



A Development Sequence Plan

as of 9/79

• • • • Planning Area
— Major Proposed Roads

- 1 Stage One
- 2 Stage Two
- 3 Stage Three
- 4 Stage Four

SOURCE: Montgomery County Planning Board,
Research and Special Projects Division.

"To facilitate the timely construction of this portion of Maryland Route 118 the Montgomery County Council may establish a Public Improvement District in that portion of Germantown west of I-270. The Public Improvement District will be responsible for the construction of that portion of Maryland Route 118. The financing for the construction would come from fees collected at the time of building permit approval. The fees would be on a per-unit basis for residential development and on a per square foot basis for retail and office development.

"If the County Council does not establish a Public Improvement District and if the highway improvements are not programmed by the State by the time private development wishes to move ahead then an alternative approach is proposed. In such a situation, all subdivisions in that part of Germantown which apply for recordation subsequent to the approval and adoption of this amendment must first enter into a public works agreement for the widening to four lanes of that portion of Maryland Route 118 from Middlebrook Road to Aircraft Drive and the improvement of those two intersections. This requirement shall be a condition of the approval of any preliminary plan or the extension of the approval of any preliminary plan made subsequent to the approval and adoption of this amendment.

"Upon recording, the owner and all successors and assigns will be bound, by public improvement agreement, to construct the improvements. The agreement shall be in accordance with the requirements of the State, County and/or Municipal agency, whichever is applicable and the agreement shall be recorded in the land records of Montgomery County. This agreement shall not constitute the programming of the road improvement. Therefore, any subdivision in the portion of Germantown west of I-270 is subject to the requirement of entering into such an agreement prior to recordation even if another developer has previously signed a similar agreement. The requirement to enter into such an agreement shall continue until the roadway improvements are completed by private funds or until 50% (fifty percent) of the construction funds for the improvements are contained in the 5-year State Secondary Highway Improvement Program or in the 6-year County Capital Improvements Program."

STAGE THREE

The third stage of Germantown development depends upon detailed study and decisions and will open the remaining sections of the first three villages to development. It will also open the sections of Clopper Village which can be properly served by public facilities.

The areas to be opened within Stage Three will be dependent upon specific major transportation facilities being programmed for construction and the programmed extension of sewer service areas. While zoning for Stage Three may occur fairly early, under the Adequate Public Facilities Ordinance, subdivision development cannot commence until major additions to provide traffic accessibility and sewer service have been programmed. Thus, subdivision approval cannot be granted for those areas in Stage Three until the improvements necessary for their support have been programmed. The timing for the programming of the necessary facilities should be reviewed as the time approaches to commence Stage Three and annually thereafter, in regard to the pace of development during Stages One and Two.

There are three major transportation facilities which relate to this phase: (1) the Eastern Arterial, (2) the Western Arterial, and (3) the additional interchanges on I-70-S (see Section 3.2). The areas encompassed in the sectional map amendment process recommended for Stage Three should relate to the transportation facility to be provided.

The aggregate potential number of new units in Stage Three is 4,700. The land in Stage Three is currently held in 42 separate ownerships.

Major development in the central business district, as well as the development of village centers in Gunners Lake Village if not already under way and in Clopper Village, is expected to take place during Stage Three. This stage can also be expected to produce major highway-oriented uses in the areas designated for them in the Land Use Plan.

Subject only to sewer service and storm-water management constraints, all remaining land indicated for industrial development on the Land Use Plan should be included in the sectional map amendment for Stage Three; and development should be authorized.

SUBSEQUENT STAGES

The subsequent stages of development depend primarily upon major sewer service extensions, in terms of trunk lines and pumping stations. They are also dependent upon the provision of additional storm-water management facilities. Comprehensive rezoning in the form of sectional map amendments will be undertaken, as necessary in response to the construction of such facilities. During these final "build-out" stages, 10,000 additional dwelling units will be developed, as well as the two additional village centers and completion of the town center and central business district.

NORTH BETHESDA SECTOR PLAN-GROSVENOR

Adopted May 1978
(Starting on Page 76)

STAGING

As discussed under Land Use Plan, two alternative land use plans are proposed, particularly affecting the areas adjacent to the METRO station. The alternatives are based upon the potential air-rights development over the METRO facilities. The staging of development at the station should also be based on retaining the option for air-rights development for at least several-years. If air rights are acquired on parcel 2, then Land Use Plan "A" will remain effective. If, however, air rights have not been conveyed within two years of the Grosvenor METRO station's becoming operational, then Land Use Plan "B" would be deemed effective. The Planning Board may, however, extend this time by an additional twelve months provided evidence is submitted that negotiations regarding air rights are about to be concluded.

The staging of development should be reflected in any rezoning application. The recommended Transit Station-Residential (TS-R) Zone requires a staging plan to be submitted with a rezoning application. It is recommended that the increment of development that would be permitted on parcels 3 and 4, if Land Use Plan "B" became operational, be indicated on the rezoning application as the final stage of development. That final stage of development would be authorized only upon a finding by the Planning Board that Alternative "B" is the operative plan. In this way, both the county and the applicant would not have to go through the rezoning process again if Land Use Plan "B" were operational, and yet the ultimate development scale of the parcels would be limited by disallowing the final stage if air-rights development becomes a reality.

Careful consideration should also be given at time of zoning to staging the development of properties to ensure that development is coincident with the provision of METRO and new proposed streets. This will ensure that new development can take full advantage of its proximity to METRO. Protection from over development can also be provided through the development review process at time of application for rezoning to either the Planned Development or Transit Station zones, wherein a finding of adequacy of public facilities must be made as a prerequisite for rezoning. This provision ensures that public facilities exist of sufficient capacity to accommodate the development proposed in the rezoning. Or it may provide for the staging of development to coincide with the provision of those public facilities.

NORTH BETHESDA SECTOR PLAN-NICHOLSON LANE

Adopted May 1978
(Starting Page 127)

STAGING

As previously discussed, two alternative land use plans are proposed for the transit station core, based upon the potential of air-rights development over the eastern METRO facilities. The staging of these two alternatives should be based on the operation of the Nicholson Lane METRO station. If air rights are acquired on the parcel designated as METRO East, then Development Alternative "A" is effective; if, however, air rights are not acquired within two years of the Nicholson Lane METRO station's becoming operational, then Development Alternative "B" would be deemed effective. The Planning Board may, however, extend this time by an additional twelve months, provided evidence is submitted that negotiations regarding air rights are about to be concluded.

This can be reflected in any rezoning application to the recommended TS-M Zone through a staging plan which is a required part of the rezoning submission. It is recommended that the increment of development, which would be permitted on the adjacent parcels if Development Alternative "B" becomes operative, be listed on the staging plan as the final stage of development. Of course, this would also require other qualifiers to be added to the rezoning, especially the implementation of Development Alternative "B". Thus, neither the applicant nor the county would have to go through the expense or time involved with the rezoning process again, the development can be controlled whether or not air rights are acquired.

Careful consideration should be given at time of zoning to staging the development of properties in the transit station zones to ensure that development is coincident with the provision of METRO and new proposed streets. This will ensure that new development does not overburden the public facilities in the area, and the new development can take full advantage of their proximity to METRO. Protection from over development can also be provided through the development review process at the time of application for rezoning, wherein a finding of adequacy of public facilities must be made as a requisite for rezoning. This provision ensures that public facilities of sufficient capacity will be available to accommodate the development proposed. It may also provide for the staging of development to coincide with the provision of those public facilities.

POTOMAC MASTER PLAN
Adopted May 1980
(Starting Page 143)

STAGING PROGRAM

The implementation and staging recommendations contained in the Plan are based on the following factors:

1. The major roads which serve the Subregion have limited transportation capacity at present.
2. Sewage treatment capacity to serve the Subregion is a primary limiting factor within the master plan period (0-10 years).
3. The only realistically available staging mechanisms are the provision of sewer service and the improvement of street capacity.
4. It is County policy to provide "moderately priced dwelling units" (MPDU's) in the Subregion, as well as in all other areas of the County which are zoned for half acre or more dense zoning. However, MPDU's are not required in areas which are not within the ten year water and sewer envelope.
5. Much of the area currently zoned RE-2 can be developed on septic and well systems at densities comparable to or only slightly reduced from the two acre zoning standard.

Based on the above, the Plan recommends that the highest priority for development be granted in those areas recommended for R-200 zoning. If the R-200 areas are inhibited from development because of a lack of sewer allocations, the areawide general transportation capacity that is currently available will eventually be used up by other development which would occur in the RE-2 (Residential Estate - 2 acre) zoned areas. Eventually, the following adverse conditions would result:

1. Few, if any, MPDU's will be constructed in the Subregion until sewer capacity becomes generally available and additional transportation capacity is provided. Since the deficiency of transportation capacity occurs primarily on State highways, such as River Road and Route 28, the implementation of County housing policy in the Potomac Subregion depends indirectly on the State's ability to finance new highway construction.
2. The number of vehicle miles of travel for all trip making purposes increases.
3. Continued dispersion of potential elementary and secondary students will increase the length of school bus trips.
4. Development of the two acre areas on septic systems can result in development patterns which are not ecologically sound or environmentally sensitive in terms of preserving unique natural features and open space.

By encouraging early development of the R-200 areas by making sewage treatment capacity available, the new growth will be better matched to the available transportation capacity. Later occurring, low-density sprawl-type development could then be retarded through the use of the adequate public facilities ordinance if improvements to road capacity are not made. Under the County's Adequate Public Facility Ordinance, when the available transportation capacity has been exhausted, additional subdivisions which can be shown to overtax the highway network, whether on sewer or septic, cannot be approved until additional highway capacity becomes available. First priority for sewer service (Category 1-3) should be given to areas within the R-200 zoning category.

The approximately 5,280 acres of undeveloped land in the R-200 classification could produce a maximum of 12,672 new dwelling units if allowed to develop and the density bonus for MPDU's is applied.

The second and third priority areas to receive sewer service, respectively, should be the Rock Run Drainage Basin and those two-acre areas between River Road and the Potomac River. The Plan recommends that these areas be placed in sewer and water service category five. This places these areas within the sewer envelope but at the end of the 7 to 10 year period.

The final stage for the expansion of the sewer envelope would be those two-acre areas which can logically and economically be served by extensions from, or which can tie in with the transmission system as extended during the previous stages. Since there are no programmed dates for the provision of additional treatment capacity, it is impossible at this time to recommend dates for the beginning of each stage. With the exception of the Stage I recommendations, which would begin immediately, the other two stages must be tied to the provision of sewage treatment capacity and highway capacity. Depending upon how additional capacity is provided some refinements of the staging elements may be desirable in future years, but within the general policies recommended above.

The Plan does not contemplate extension of sewer and/or water to all of the areas recommended for two acre (RE-2) zoning, particularly those two-acre areas immediately adjacent to the Rural Zone areas. If the transmission system extensions to serve a given area cannot be constructed economically, then that area should be allowed to develop on well and septic systems.

ROCK CREEK MASTER PLAN

Adopted October 1968

(Starting on Page 45)

Sanitary Sewers--Sanitary sewers, eventually, will be needed to serve the planning area. This will be absolutely necessary in all density-controlled development if the "cluster" regulations continue to require access to sanitary sewers as a prerequisite for this type of development.

A reasonable modification to the present controls would be to allow utilization of individual septic systems in cluster development as now permitted in connection with conventional subdivision design, as set forth in Section 104-16(c) of the existing Subdivision Ordinance. This would permit, in varying degree, some reduction in total lot size in the Agricultural Residential and Residential Estate Zones, while maintaining the overall density required.

This flexibility in the regulations would be particularly helpful to the developer building a small number of homes. It also would permit development to proceed under a modified form of density control prior to the advent of sewers.

Flexible regulations in respect to the use of septic tanks would not be applicable to cluster development in the Rural Residential Zone. Here, access to sanitary sewers would be required, because lot sizes may be reduced to 10,000 square feet in a cluster plan, and this size lot is not acceptable for septic tank use.

Public schools required to serve the community also will need sanitary sewers. Thus, it will be necessary to provide sanitary sewerage to serve the planning area. It is recommended that these be designated as controlled-access sewers in order to assure that development occurs in conformance with the plan.

OLNEY MASTER PLAN
Adopted June 1980
(Starting on Page 125)

IMPLEMENTATION

This chapter describes policies and programs which should be taken to implement the Olney Master Plan.

STAGING RECOMMENDATIONS¹

The Fifth Annual Growth Policy Report of the Montgomery County Planning Board proposes a County-wide staging policy. The staging program for Olney consists of two stages:

STAGE ONE is keyed to the present carrying capacity of Georgia Avenue. Until widened, this major access road to Olney can only absorb traffic from another 1,700 homes.

STAGE TWO will begin when Georgia Avenue is programmed for widening to 4 lanes from Norbeck Road to Maryland Route 108 (the project is in the final design stage). This improvement will accommodate all future growth projected for Olney (5,000 dwellings).

The Olney Master Plan supports these staging policies as follows:

The first stage of development in Greater Olney will be limited to the capacity of Georgia Avenue. Stage Two development will commence when improvements from Norbeck Road to Route 108 are placed in the State Highway program for construction.

All subdivisions in the Georgia Avenue corridor south of Brookeville will be counted toward the capacity of Georgia Avenue. However, development in the rural area north of Brookeville will not be affected by the limited capacity of Georgia Avenue because densities are too low and the traffic distribution pattern too scattered to significantly affect highway traffic volumes.

Once the widening of Georgia Avenue is funded by the State Highway Administration's Five Year Construction Program, additional growth can occur since the Planning Board, in administering the Adequate Public Facilities Ordinance, must recognize the capacity of projects slated for construction within a six-year period.

This Plan supports the recommendations of the Fifth Annual Growth Policy Report that the APF ordinance be amended to require that a project be at least 50 percent funded in order to be considered an adequate facility. This requirement would allow better coordination of private growth and public facilities.

¹ These recommendations are consistent with the Planning Board's 5th Annual Growth Policy Report.

Two major public facility systems--Sewerage and Transportation--will determine the staging of development in the northeast quadrant of the Town Center.

To facilitate development in the Town Center, it will be necessary to amend the Comprehensive Water Supply and Sewerage Systems Plan map. A portion of the northeast quadrant is presently in Category S-5 which means services are not planned for 7 to 10 years. The Olney Master Plan recommends that sewer services be provided as soon as market demand exists for proper development and utilization.

Over the entire development, the timing of major transportation system improvements is crucial. Georgia Avenue must be widened and Prince Philip Drive completed to Georgia Avenue before development of the Town Center can be fully realized. The final segment of Prince Philip Drive will be a costly road partly because of a ravine which must be spanned near Georgia Avenue. To assure timely completion of the road, which is needed to service TDR receiving zones as well as the Town Center, County participation in the construction process may be necessary.

As the Town Center and receiving zones near completion, the level of service along Route 108 and between Dr. Bird Road and Bowie Mill Road may decline. Traffic levels along Route 108 will be monitored and the necessary right-of-ways for the road will be dedicated at time of subdivision to help assure timely completion of improvements when and if they are needed.

A summary of the Plan's staging recommendations is contained in Table 15.

TABLE 15
OLNEY MASTER PLAN
STAGING RECOMMENDATIONS

STAGE ONE		STAGE TWO
Proposed Growth	1,700 homes	3,300 homes
Key Land Use Use Policies	<ul style="list-style-type: none"> - Encourage residential infill in existing sewer envelope. - Begin construction of Town Center. - Implement TDR Program. 	<ul style="list-style-type: none"> - Continue implementation of TDR Program and Town Center concept.
Key Community Facilities	<ul style="list-style-type: none"> - Completion of Georgia Avenue/Route 108 intersection. - Completion of Georgia Avenue/Norbeck Road intersection. - Completion of Briars and Queen Elizabeth Roads. - Construction of Olney library. - Expansion of Longwood Recreation Center. - Construction of priority bikeway paths. 	<ul style="list-style-type: none"> - Georgia Avenue widened from Norbeck to Town Center. - Additional sewage pumping capacity in N.E. quadrant of Town Center. - Opening of Glenmont Metro line.

GEORGIA AVENUE WIDENING FUNDED

SANDY SPRING/ASHTON SPECIAL STUDY AREA

Adopted November 1980

(Starting on Page 83)

Water and Sewer Service Recommendations

Proposed changes to the Montgomery County Comprehensive Water Supply and Sewerage Systems Plan are shown on the Proposed Water and Sewer Plan map.

The Plan:

1. Recommends providing public water and sewer service to portions of Sandy Spring and Ashton planned for commercial and medium-density residential uses.
2. Continues limited access sewer policies in the area between Ednor Road and Maryland Route 108.
3. Recommends the overall support of the following County rural sanitation policies for areas designated for low-density residential development:
 - Public water and sewer in rural areas should be discouraged except in cases where public health hazards have been clearly documented by the County.
 - Both sewer and water service should be provided simultaneously whenever possible.
4. Supports a small extension of public sewer and water to allow the clustering of homes away from historic structures along Meeting House Road. The overall density would be consistent with the Master Plan.
5. Endorses the County's Office of Environmental and Energy Planning (OEEP) efforts in developing a Rural Sanitation Plan which will provide a framework for the solution of rural sanitation problems. The OEEP has conducted a sanitary survey of Sandy Spring to document the existing health problems and cost-effective ways of dealing with the problems. Solutions could include new wells and/or septic systems, possible use of mound systems, an alternative system or some pumping facilities.

SHADY GROVE SECTOR PLAN

Adopted April 1977

(Starting on Page 134)

10.2 IMPLEMENTATION PROCEDURES AND STAGING

Staging of development in Shady Grove should take place during three time periods: short range (next 2-3 years), middle range (3-8 years), and long range (beyond 8 years). In the short range time frame the staging of public facilities is tied to the opening of the Metro station. Capital improvements are required to provide access and sewerage service to Metro. In the middle range time frame, private development is tied to the construction of Crabb's Branch sewer and the provision of sewerage for this subwatershed.

Although sewerage service will be provided during the middle range time frame the entire sector plan area should not be developed during this period. The King farm, the large expanse of property proposed for Industrial Park (I-3) zoning (planning analysis area 28, see Figure 28), should not develop until sufficient transportation facilities are in place. Thus, during the short and middle range time frames the King farm is proposed to be kept in the present R-200, residential zone. When the transportation facilities outlined below are in place, rezoning to I-3 would be appropriate if all other appropriate planning criteria are met.

The staging mechanisms available to the County, i.e., the Capital Improvement Program, sewer service categories, and sectional map amendment, should be modified to implement the staging recommendations of this Plan.

SILVER SPRING SECTOR PLAN

Adopted July 1975

(Starting on Page 105)

STAGING

In order to maximize the METRO Orientation and focus of the Central Business District, this Plan proposes that, to the extent possible, new development be encouraged to center first upon the METRO station--particularly and relatively undeveloped parcels east of the B & O R.R. tracks. This suggests that impetus be given to undertake new development on parcels close to the METRO facilities on Second and Wayne Avenues, and on Bonifant Street. Similarly, early development in the area between Cameron Street and Colesville Road should also be encouraged. In addition to parcels on the east side, the Loving tract could be permitted to develop during this first or interim stage.

Accordingly, this plan proposes that any interim sewer capacity available for Silver Spring recognize that these areas should receive first priority for service.

Secondarily, in response to proposed public investment in a first pedestrian way link between the METRO station and the east side of Georgia Avenue, development of the Civic Center area should be undertaken.

New construction in other areas is not meant to be precluded by this orientation; however, proposed development projects in other parts of the Sector Plan area should be looked at carefully in terms of their relation to both public improvements and to the development of the central core, which must have first priority to give Silver Spring an attractive and viable future.

After construction of the Advanced Wastewater Treatment Plant, making sewer service generally available throughout the County, a second stage for development in Silver Spring will begin.

The Falkland tracts, due to their size and the importance of an integrated development plan and schedule for them, should not develop until this second stage is reached, but, in any event, not before 1980.

SILVER SPRING EAST MASTER PLAN

Adopted March 1977
(Starting on Page 76)

Water Quality/Sewerage System

...
While water quality of the Anacostia River tributaries is generally considered good, above-average, mean bacteriological densities and evidence of decal coliform pollution have been registered in all three streams at various times. The condition of some parts of the gravity sewer systems, which are old and have experienced leakage, are believed to have polluted the area's natural waterways. Periodic surcharging (overflow) occurs due to leakage of storm water into the sewer system during heavy storms. The completion of scheduled relief sewer projects should improve overall water quality. The projects at Long Branch and Northwest Branch are nearly complete and the Sligo Relief and Silver Spring Avenue Replacement Sewer projects will be constructed during 1977 and 1978.

In an attempt to continue to upgrade water quality, the following actions are recommended:

- Sources of stream pollution within the area and corrective action to improve water quality should be accurately determined by the DEP and WSSC; and
- Reports of the water quality of stream valleys should be published periodically.

To improve the conditions relating to sewerage systems, the following actions are recommended:

- Planning and construction of sewers should be sufficiently long range and coordinated with appropriate agencies, so as to minimize disruption to parkland and adjacent private uses; and
- The M-NCPPC and WSSC should continue to notify all adjoining and interested citizen's associations of sewer replacement or expansion, or any other utility work that may have a community impact.

TAKOMA PARK SECTOR PLAN

Adopted 1974

(Starting Page 58)

Stage II - 1979-1984

End of Sewer Moratorium

- Lifting of the sewer moratorium in the Anacostia Drainage Basin should allow new development to occur in Montgomery County.

Potential Development

- Mixed-use development should occur in the Carroll Avenue-Laurel Avenue shopping area, including provision of such desirable features as a variety of retail uses on street frontage, an open space relationship to the urban park at Westmoreland Avenue, and a pedestrian corridor past the Seventh Day Adventist Church to the Metro Station.
- Development may occur in the portion of the District of Columbia along Carroll Avenue and adjacent to Cedar Street.

Adequacy of Buffers

- Buffers between residential areas and the Metro station site or business areas should be evaluated; and improvements should be made, if necessary.

Neighborhood Maintenance

- Progress of neighborhood maintenance in the low-density residential area south and west of Tulip Avenue and in the other residential areas within the Metro station impact area should be assessed.

Stage III - 1984-1994

Potential Development

- Given that the necessary land assemblage occurs, and that such development is still compatible to the area, the redevelopment indicated as suitable for townhouses may possibly take place.
- Remaining land in the shopping area should now develop, preferably in a mixture of uses (under TS-M zoning)--particularly the land on the north side of Carroll Avenue in the Montgomery County portion of the Takoma Park business district.

II
FORECASTS

COMPREHENSIVE
PLANNING
POLICIES

FORECAST

Introduction

The Montgomery County Planning Board provides forecasts of population, employment and housing to serve the planning and budgeting needs of County government. These forecasts are also available to serve the general public. Target areas of forecast coverage include the County's several policy and planning areas as well as the entire jurisdiction.

Forecasts are focused upon the next five- to ten-year interval, and they have their greatest comparative accuracy and relevance for that period. The County also requires longer-term forecasts to serve needs beyond this mid-term period, and the Planning Board also attempts such predictions.

Generally, the accuracy of the forecasts diminish with the increasing length of the forecast period. The reliability of the forecasts also tends to diminish with the decreasing size of the study area, i.e., greater confidence is obtained for County-wide forecasts than for any single planning area. Also, greatest comparative forecasting confidence is obtained within the entire five-year perspective as compared to any single year within a given time interval.

The forecasting process for 1982 benefits from the immediacy of the 1980 Census data which have become available during the past year. The decade of the 1970's revealed several highly significant demographic trends for the County as a whole, and it also highlighted profound differences between the "down-County" and "up-County" populations. The latter differences are so marked that planning and budgeting programs for the County must necessarily be adapted to each of these separate demographic configurations.

1970-1980 Census Changes

The most noteworthy population change in the metropolitan area and in the County during the 1970's has been the precipitous drop in average household size. The household size decrease reflected a nationwide pattern, wherein only modest population gains were contrasted with substantial increases in the housing inventory and their occupant households. Real income increases exceeded rent level increases during the 1970's, and these income increases were able to support independent housekeeping among younger adults and among divorced and widowed persons. Illustratively, during the 1967-77 period, approximately one-half of all net household gains in the United States were represented by single-person households. Low mortgage interest rates supported massive rental housing production during the early 1970's, allowing large-scale upgrading and release of vacated units to additional household formations. The same abundance and low cost of mortgage funds also supported high levels of sales housing production, in turn, providing for a substantial tenure switch of renter to owner status.

These foregoing dynamics of the 1970's were startlingly expressed in the metropolitan area by a household increase of some 217,000 as compared to a population increase of only 200,000. The metropolitan area rate of household increase was nearly four times the rate of population growth. Average household size in the metropolitan area dropped from 3.09 persons to only 2.67 persons.

Household changes in the County generally matched those of the metropolitan area. County household increases, however, reflected growing population as well as decreasing average household size. County average household size decreased from 3.3 persons in 1970 to 2.77 persons in 1980, reflecting a rate of decrease which, in fact, exceeded the metropolitan area's.

The 1980 Census additionally showed the emergence of a "two County" pattern for Montgomery County, wherein the mature, established suburbs closest to District of Columbia boundaries reflected many of the demographic characteristics of traditional urban areas, while the newer, outlying suburbs continued to reflect more traditional "suburban" traits.

In the case of the former, the urban characteristics of the mature suburbs were typified by smaller household size, fewer school-age children, more single parent households, and older age of household members. In the case of the latter suburban category, households were larger, there were more husband-wife groupings, there were more school-age children, and there were comparatively fewer elderly persons and household heads.

The foregoing two-County configuration has introduced new planning considerations and concerns. A school closing program in the mature suburbs will be paralleled by a school construction program in the newer suburban areas. The down-County areas now present problems of preserving neighborhood vitality and providing services for areas whose occupants require different facilities than those needed less than two decades ago. In the up-County areas, the needs are more traditionally suburban, e.g., providing the urban infrastructure to serve new population concentrations, such as roads, streets, water, sewer, schools, fire protection, etc.

The Recession and a Depressed Housing Market

The intensity and duration of the current economic recession will have a profound effect upon the validity of the population, housing, and employment forecasts which the Planning Board must make for the next five- to ten-year period. A slowdown in the Washington region's employment growth will inhibit new household formation and immigration into the region and County. It is possible, in fact, that continuing reductions in federal employment will cause regional out-migration, not only among displaced federal employees, but also among the employees of private firms that have served the federal establishment.

Preceding the current recession has been the deterioration of the area and County housing markets, attributable to the high costs of new housing and to the extremely high level of mortgage interest rates. The affordability gap, defined as the proportion of families unable to afford new housing at prevailing costs and financing, has been increasing. This situation is more fully explained in Chapter III on the Status of Development.

Population and Dwelling Units

The results of the 1980 Census indicated that reconsideration and reevaluation of previous forecast estimates are warranted. Data showed an even slower rate of population growth and greater decreases in average household size than previously anticipated.

TABLE 2
MONTGOMERY COUNTY DEVELOPMENT FORECAST¹

	<u>Persons</u>				
	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>
High					
Low	579,000	587,000	622,000	668,000	711,000
-----	-----	-----	-----	-----	-----
State Planning Forecast	-	589,000	606,000	-	628,000
	<u>Households</u>				
High					
Low	206,793	226,893 ²	249,393	271,893	291,843
	222,793 ²	234,693	244,693	254,693	
	<u>Employment</u>				
High					
Low	302,000	331,100	375,000	414,000	460,000
		324,800	367,000	391,000	419,300

¹ These forecasts represent the current judgment of the Planning Board staff. The process of amending the Round II Cooperative Forecast has started and is expected to be completed by Spring 1983.

² Between the 1980 Census and January 1982, households have increased by 8,977. The low forecast includes these households and then assumes approximately 2,000 additional household per year thereafter.

Source: Montgomery County Planning Board, Research and Special Projects Division.

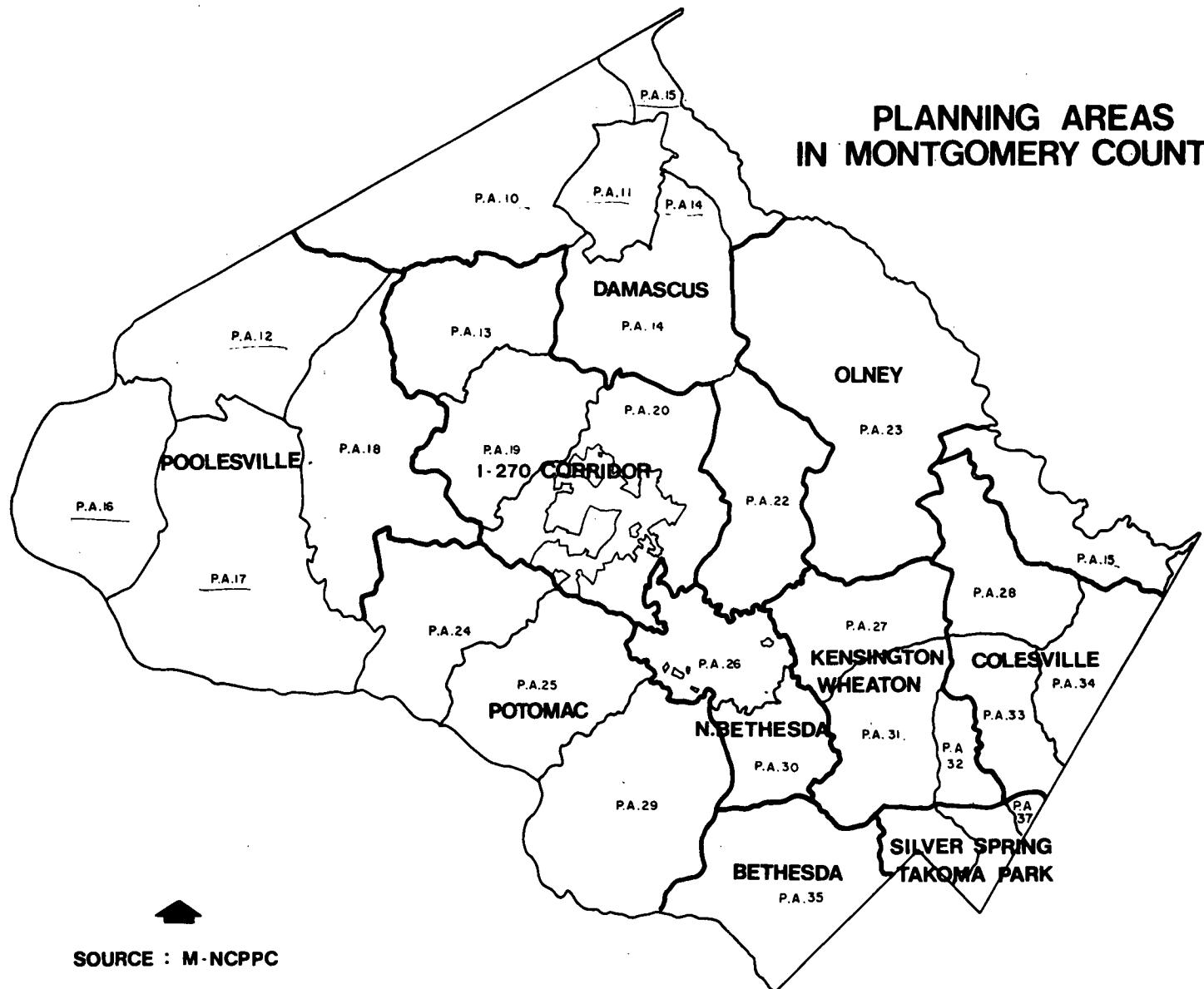
TABLE 3
PERCENTAGE DISTRIBUTION OF MONTGOMERY COUNTY POPULATION BY AGE - 1970-80-90

<u>Age Group</u>	<u>1970</u>	<u>1980</u>	<u>1990</u> ¹
0 - 4	8.2	5.8	7.1
5 - 14	21.6	15.0	11.9
15 - 24	16.1	16.8	14.4
25 - 34	13.3	17.4	16.2
35 - 44	13.4	14.1	15.5
45 - 64	21.2	22.1	24.9
65+	6.2	8.8	10.0
	100.0	100.0	100.0

¹ Excludes persons in group quarters.

Source: U.S. Census 1970-1980, and Montgomery County Planning Board, Research and Special Projects Division.

PLANNING AREAS IN MONTGOMERY COUNTY



SOURCE : M-NCPPC

TABLE 4
POPULATION FORECAST - Fall 1982
MONTGOMERY COUNTY

Planning Areas	HIGH SCENARIO			Forecast Change 1980-1990	LOW SCENARIO			Forecast Change 1980-1990
	1980	Population 1985	1990		1980	Population 1985	1990	
SILVER SPRING	54,600	53,300	53,600	-1,000	54,600	53,900	52,300	-2,300
36 Silver Spring	29,650	30,200	31,500	1,850	29,650	30,500	30,400	750
37 Takoma Park	24,950	23,100	22,100	-2,850	24,950	23,400	21,900	-3,050
BETHESDA	80,400	74,600	76,300	-4,100	80,400	74,400	72,700	-7,700
35 Bethesda	80,400	74,600	76,300	-4,100	80,400	74,400	72,700	-7,700
NORTH BETHESDA	75,800	73,400	75,000	-800	75,800	73,200	71,600	-4,200
26 Rockville	45,300	42,300	41,900	-3,400	45,300	42,800	41,250	-4,050
30 N. Bethesda	30,500	31,100	33,100	2,600	30,500	30,400	30,350	-150
KENSINGTON-WHEATON	155,350	144,500	143,500	-11,850	155,350	144,500	137,700	-17,650
27 Aspen Hill	47,750	44,400	44,500	-3,250	47,750	44,600	41,900	-5,850
31 Wheaton	75,500	69,800	69,000	-6,500	75,500	69,700	66,800	-8,700
32 Kemp Mill	32,100	30,300	30,000	-21,100	32,100	30,200	29,000	-3,100
I-270 CORRIDOR	73,600	91,900	110,800	37,200	73,600	90,000	93,400	19,800
13 Clarksburg	1,200	1,200	1,200	0	1,200	1,100	1,000	-200
19 Germantown	10,400	17,000	27,100	16,700	10,400	16,100	17,600	7,200
20/21 Gaithersburg	62,000	73,700	82,500	20,500	62,000	72,800	74,800	12,800
COLESVILLE	46,900	53,900	61,400	14,500	46,900	49,600	48,850	1,950
28 Cloverly	11,400	11,500	13,500	2,10000	11,400	10,800	10,300	-1,100
33 White Oak	26,000	25,700	27,300	1,300	26,000	24,600	23,950	-2,050
34 Fairland	9,500	16,700	20,600	11,100	9,500	14,200	14,600	5,100
POTOMAC	48,550	49,400	51,800	3,250	48,550	47,200	48,300	-250
24 Darnestown	4,800	5,300	6,300	1,500	4,800	5,100	5,500	700
25 Travilah	5,850	5,800	6,500	650	5,850	5,600	5,100	-750
29 Potomac	37,900	38,300	39,000	1,100	37,900	36,500	37,700	-200
OLNEY	17,100	18,700	20,700	3,600	17,100	17,900	16,800	-300
23 Olney	17,100	18,700	20,700	3,600	17,100	17,900	16,800	-300
DAMASCUS	19,300	20,300	22,000	2,700	19,300	19,800	21,000	1,700
10 Bennett					14,900	15,400	17,000	2,100
11 Damascus	14,900	15,900	17,200	2,300	14,900	15,400	17,000	2,100
14 Goshen					4,400	4,400	4,000	-400
15 Patuxent					4,400	4,400	4,000	-400
22 Rock Creek	4,400	4,400	4,800	400	4,400	4,400	4,000	-400
POOLESVILLE	7,400	7,000	6,900	-500	7,400	7,000	6,350	-1,050
12 Dickerson					7,400	7,000	6,350	-1,050
16 Martinsburg	7,400	7,000	6,900	-500	7,400	7,000	6,350	-1,050
17 Poolesville								
18 Lower Seneca								
TOTAL COUNTY	579,000	587,000	622,000	43,000	579,000	577,500	569,000	-10,000

Source: Montgomery County Planning Board, Research and Special Projects Division.

Note: 1980 figures are estimates made by combining census block data from 1980 Census to planning area geography. Forecasts for 1985 and 1990 were prepared by the MCPB staff. The forecasts constitute revisions to the forecast previously published in the Sixth Growth Policy Report, Land Supply and Demand, November 1980, based upon the 1980 Census and recent demographic and housing construction trends. A new forecast will be prepared in spring of 1983, when the Regional Cooperative Forecast process completes its third round of revisions. The regional effort will provide a consistent set of forecasts for the entire Washington Region. In a few planning areas, the low population projections are slightly above the high forecast. Because of explicit assumptions about mobility, household formation and the mix of types of dwelling units, there are more people per household in the low forecast in some planning areas.

TABLE 5
HOUSEHOLD FORECAST - FALL 1982
MONTGOMERY COUNTY

Planning Areas	HIGH SCENARIO			Forecast Change 1980-1990	LOW SCENARIO			Forecast Change 1980-1990
	1980	Households 1985	1990		1980	Households 1985	1990	
<u>SILVER SPRING</u>	23,852	24,397	25,152	1,300	23,852	24,302	24,602	750
36 Silver Spring	14,015	14,460	15,165	1,150	14,015	14,415	14,665	650
37 Takoma Park	9,837	9,937	9,987	150	9,837	9,887	9,937	100
<u>BETHESDA</u>	31,934	32,984	34,334	2,400	31,934	32,684	33,184	1,250
35 Bethesda	31,934	32,984	34,334	2,400	31,934	32,684	33,184	1,250
<u>NORTH BETHESDA</u>	26,514	28,564	30,614	4,100	26,514	28,264	29,714	3,200
26 Rockville	14,788	15,638	16,538	1,750	14,788	15,638	16,538	1,750
30 N. Bethesda	11,726	12,926	14,076	2,350	11,726	12,626	13,176	1,450
<u>KESINGTON-WHEATON</u>	55,102	56,902	58,852	3,750	55,102	56,702	57,652	2,550
27 Aspen Hill	16,703	17,603	18,703	2,000	16,703	17,553	17,903	1,200
31 Wheaton	26,733	27,333	27,983	1,250	26,733	27,233	27,683	950
32 Kemp Mill	11,666	11,966	12,166	500	11,666	11,916	12,066	400
<u>I-270 CORRIDOR</u>	26,928	34,159	42,778	15,850	26,928	32,999	36,828	9,900
13 Clarksburg	371	402	471	100	371	392	421	50
19 Germantown	3,733	5,733	9,533	5,800	3,733	5,333	6,233	2,500
20/21 Gaithersburg	22,824	28,024	32,774	9,950	22,824	27,274	30,174	7,350
<u>COLESVILLE</u>	15,489	18,739	22,239	6,750	15,489	17,639	18,939	3,450
28 Cloversly	3,298	3,698	4,498	1,200	3,298	3,548	3,748	450
33 White Oak	8,921	9,771	10,671	1,750	8,921	9,571	9,921	1,000
34 Fairland	3,270	3,270	7,070	3,800	3,270	4,520	5,270	2,000
<u>POTOMAC</u>	14,210	16,262	18,210	4,000	14,210	15,762	17,760	3,550
24 Darnestown	1,334	1,785	2,234	900	1,334	1,685	1,984	650
25 Travilah	1,717	1,818	2,117	400	1,717	1,768	1,817	100
29 Potomac	11,159	12,659	13,859	2,700	11,159	12,309	13,959	2,800
<u>OLNEY</u>	4,777	5,677	6,777	2,000	4,777	5,477	5,877	1,100
23 Olney	4,777	5,677	6,777	2,000	4,777	5,477	5,877	1,100
<u>DAMASCUS</u>	5,748	6,919	7,998	2,250	5,748	6,699	7,848	2,100
10 Bennett					4,520	5,235	6,370	1,850
11 Damascus	4,520	5,440	6,220	1,700	1,228	1,464	1,478	250
14 Goshen								
15 Patuxent								
22 Rock Creek	1,228	1,479	1,778	550	2,239	2,270	2,289	50
<u>POOLESVILLE</u>	2,239	2,290	2,439	200	2,239	2,270	2,289	50
12 Dickerson								
16 Martinsburg	2,239	2,290	2,439	200				
17 Poolesville								
18 Lower Seneca								
TOTAL COUNTY	206,793	226,893	249,393	42,600	206,793	222,798	234,693	27,900

Source: Montgomery County Planning Board, Research and Special Projects Division.

Note: 1980 figures are estimates made by combining census block data from 1980 Census to planning area geography. Forecasts for 1985 and 1990 were prepared by the MCPB staff. The forecasts constitute revisions to the forecast previously published in the Sixth Growth Policy Report, Land Supply and Demand, November 1980, based upon the 1980 Census and recent demographic and housing construction trends. A new forecast will be prepared in spring of 1983, when the Regional Cooperative Forecast process completes its third round of revisions. The regional effort will provide a consistent set of forecasts for the entire Washington Region.

The Planning Board participates with the Metropolitan Washington Council of Governments (COG) in preparation of Cooperative Forecasts. The next COG forecasting exercise is scheduled for completion in spring of 1983. During this interim period, it has become necessary for the County to proceed with its own independent forecasts, taking into account the Census-indicated changes and dynamics. Such initiative is reflected in the County's sixth growth policy report, Land Supply and Demand, published in November, 1980. As such, it constituted a first step towards revising the COG Cooperative Forecast.

The above mentioned interim report established a new forecast range by introducing new high and low forecasts. A complete revision to the forecasts, including a recommendation for an intermediate level forecast, awaits the completion of Round III of the Cooperative Forecasting process. The new high forecast assumes a housing increase of 4,000 units per year between 1980 and 1985, and 4,500 units per year between 1985 and 1990. The new high represents a retreat from the COG Round II high. In fact, the current high projection represents the intermediate level of the COG Round II forecasts.

Placed in perspective, the new high forecast approximately represents the County's average annual housing completion level of the last four years. The 1975-79 period witnessed an average annual production of under 3,000 housing units. The low scenario annual housing increase of 2,000 units represents the bottoming-out level of housing production caused by the 1973-75 recession. Actual housing unit completion experience since 1980 and our short-term outlook suggest that an intermediate level forecast nearer to the high than the low forecast range is most likely. Year to year fluctuations in housing completions have exceeded the high forecast. The building community believes that the entire forecast range is too low. The forecast may be raised in the course of the COG Round III process.

While current economic conditions may have an overall negative impact on the region's growth during the 1980's, Montgomery County may, nevertheless, increase its regional share of employment and housing activity. Signs of this trend are emerging with recent increases in the County's regional shares of building permits and employment growth. In addition, the County has experienced an increase in the land available for housing and economic development with the lifting of the sewer moratorium in the eastern part of the County. Practically speaking, the County's available suburban development land area is greater now than it was during most of the 1970's. The County's progressive and favorable quality of life image should continue to serve its proportionally greater growth rate.

Births

For over twenty years there has been much debate among demographers concerning birth projections. We have been closely monitoring birthrates in great detail in Montgomery County for ten years. In the interim Land Supply and Demand report, alternative 20 percent higher birthrate assumptions were introduced for risk assessment purposes for both the high and low forecasts. Thus, four forecasts were produced since alternative higher birthrate assumptions were prepared for both the basic high and the low forecasts. With this report we are adjusting the basic birthrate assumptions upward by 10 percent for both the high and low forecasts. This adjustment is supported by a close examination of Montgomery County birth statistics. Since 1978 there has been an absolute increase in births and an increase in the general fertility rate--the rate per 1,000 women age 15-44. (See chart.) This was expected since the number of women in the most fertile age groups 20-34 has been increasing; however, we have observed a recent increase

TABLE 6

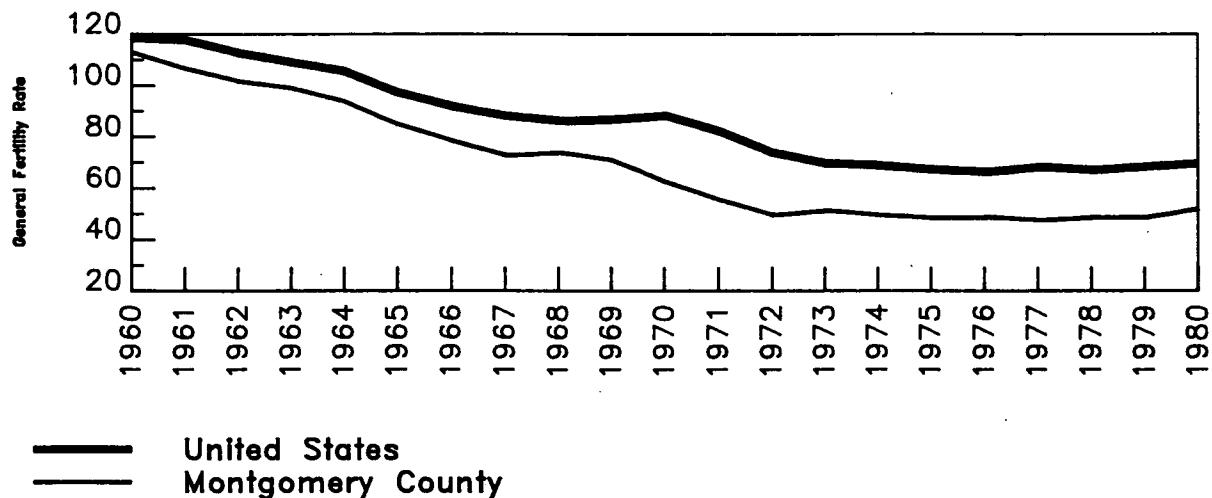
FORECAST OF BIRTHS BY PLANNING AREA
MONTGOMERY COUNTY

Planning Area	High Scenario		Low Scenario	
	1980-1984	1985-1990	1980-1984	1985-1990
<u>SILVER SPRING</u>				
36 Silver Spring	4,770	4,000	4,770	3,680
37 Takoma Park	2,410	2,200	2,410	2,020
	2,360	1,800	2,360	1,660
<u>BETHESDA</u>				
35 Bethesda	4,510	4,200	4,510	3,870
	4,510	4,200	4,510	3,870
<u>NORTH BETHESDA</u>				
26 Rockville	5,140	4,650	5,140	4,300
30 N. Bethesda	3,100	2,650	3,100	2,510
	2,040	2,000	2,040	1,790
<u>KENSINGTON-WHEATON</u>				
27 Aspen Hill	10,640	8,730	10,640	8,240
31 Wheaton	3,290	2,870	3,290	2,740
32 Kemp Mill	5,170	4,100	5,170	3,850
	2,180	1,760	2,180	1,650
<u>I-270 CORRIDOR</u>				
13 Clarksburg	6,850	7,070	6,850	6,660
19 Germantown	70	70	70	60
20/21 Gaithersburg	1,070	1,300	1,070	1,190
	5,710	5,700	5,710	5,410
<u>COLESVILLE</u>				
28 Cloverly	2,960	3,560	2,960	3,020
33 White Oak	660	690	660	600
34 Fairland	1,600	1,590	1,600	1,410
	700	1,270	700	1,010
<u>POTOMAC</u>				
24 Darnestown	2,510	2,970	2,510	2,640
25 Travilah	280	330	280	300
29 Potomac	330	330	330	300
	1,900	2,310	1,900	2,040
<u>OLNEY</u>				
23 Olney	960	1,160	960	1,040
	960	1,160	960	1,040
<u>DAMASCUS</u>				
10 Bennett	1,130	1,240	1,130	1,150
11 Damascus	870	970	870	890
14 Goshen				
15 Patuxent				
22 Rock Creek	260	270	260	260
<u>POOLESVILLE</u>				
12 Dickerson	530	420	530	400
16 Martinsburg				
17 Poolesville	530	420	530	400
18 Lower Seneca				
TOTAL COUNTY	40,000	38,000	40,000	35,000

Source: Montgomery County Planning Board, Research and Special Projects Division.

Chart 1

Comparison of Fertility Rates 1960 - 1980 Montgomery County and United States

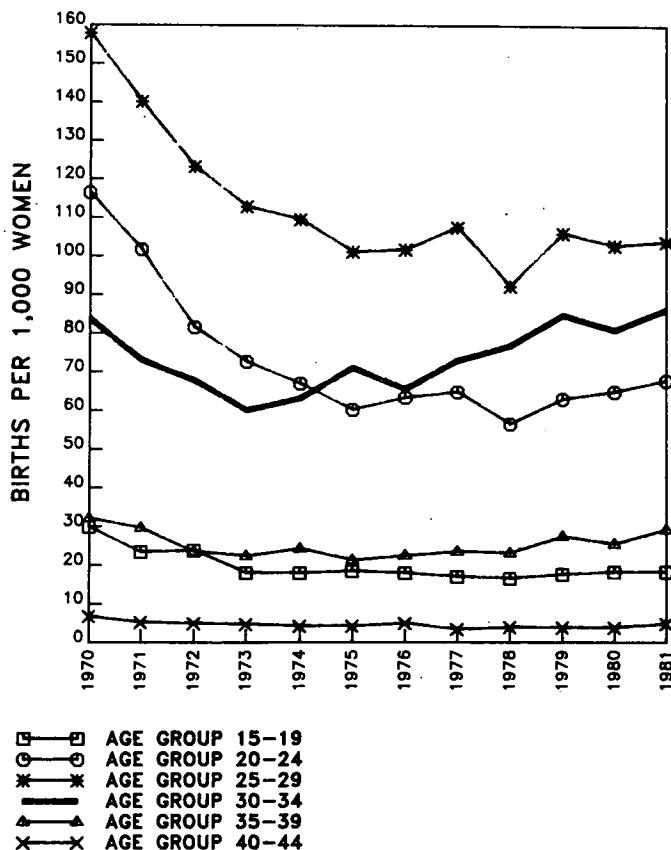


— United States
— Montgomery County

General fertility rate is the number of births
per 1,000 women ages 15-44.

Chart 2

AGE SPECIFIC BIRTH RATES Montgomery County, Maryland (1970-1981)



■ AGE GROUP 15-19
○ AGE GROUP 20-24
* AGE GROUP 25-29
— AGE GROUP 30-34
▲ AGE GROUP 35-39
X AGE GROUP 40-44

Rates dropped dramatically thru the mid 1970's, but by 1977 they began to increase for ages 20-39. The 30-34 age group is showing the greatest increase.

SOURCE: Montgomery County Planning Board, Research and Special Projects Division.

in the age-specific rates for women 20-24, 25-29, and 30-34. As reported in the press, there has been a significant increase in births for women aged 30-34. This is because of the large number of women coming into this age group and also to an increase in the age-specific birthrate due to delayed childbearing. A change of attitude with regard to childbearing is apparently taking place among women 20-24 and 25-29, although not as dramatic as in the 30-34 age group. (See chart.)

The higher birthrate assumptions result in a forecast average annual number of births of 8,000 for 1980-84, as compared to the previous forecast of 7,200. Births are projected to total 40,000 for the 1980-84 period, and 38,000 for the 1985-89 period. The decrease for the latter part of the decade results from a decline in the number of women in the most fertile age groups due to aging of the population.

For the 1980 decade, total number of births is projected to be 78,000 as compared to 69,200 for the 1970's and 80,700 for the 1960's. With the above birthrate projections, the Planning Board's Demographic Model projects that the decline in the elementary school age group should begin to reverse after the mid-decade, and by 1990 this age group should once again attain the 1980 level. This will be a slow process with rather steep declines through the mid-decade until the upturn develops. Table 6 shows the Demographic Model's forecast of births for the 1980's by planning areas.

Average Household Size

The prospective effects of the current economic and housing recession upon household growth and trends are difficult to quantify. Lack of employment and job uncertainty will curtail household formations. Single-person household formations are most sensitive to economic conditions. The observed, long-term secular trends for smaller household sizes may flatten out, or temporarily reverse themselves as young adults remain with parents, or as otherwise independent householders group together to share housing facilities.

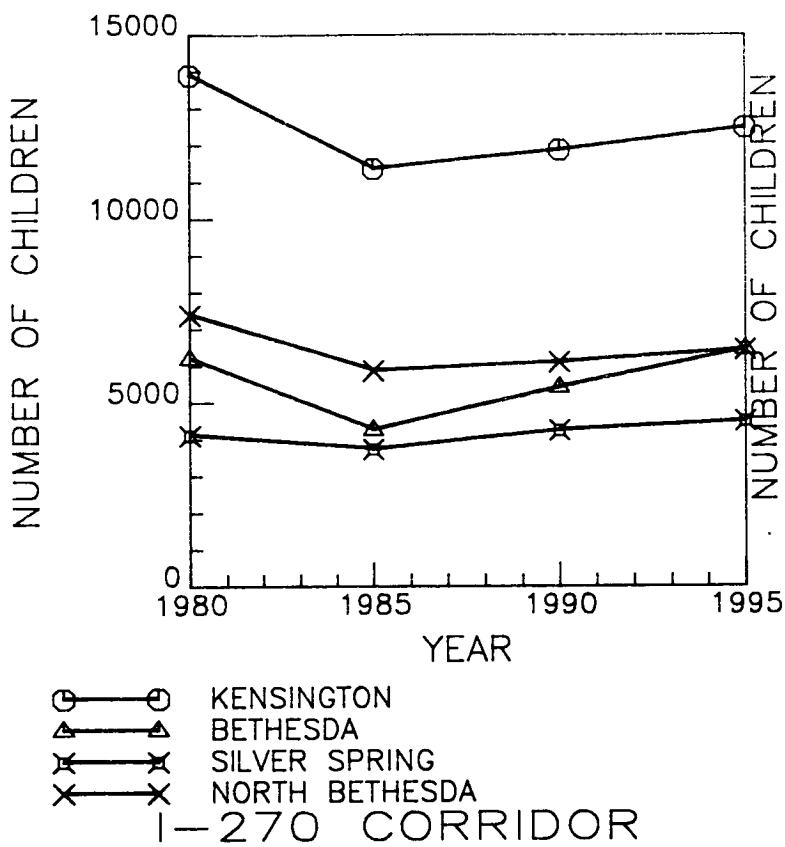
During the 1980's, average household size is projected to decline by less than 10 percent from 2.77 to 2.50, as compared to an almost 20 percent decline from 1970-80.

Continuation of high mortgage interest rates and low-level new housing production will, as suggested above, cause more intensive use of the housing inventory. A prospective manifestation of this more intensive use may be the creation of accessory apartment units. Many existing single-family structures lend themselves to economical accessory unit creation, already containing separate plumbing facilities on the ground floor level. Although such conversions are permitted only under certain specific, limited conditions in the County, it is possible that an in-depth study of policy and control issues may recommend accessory apartment development as a reasonable strategy for coping with increasing, unmet rental housing needs.

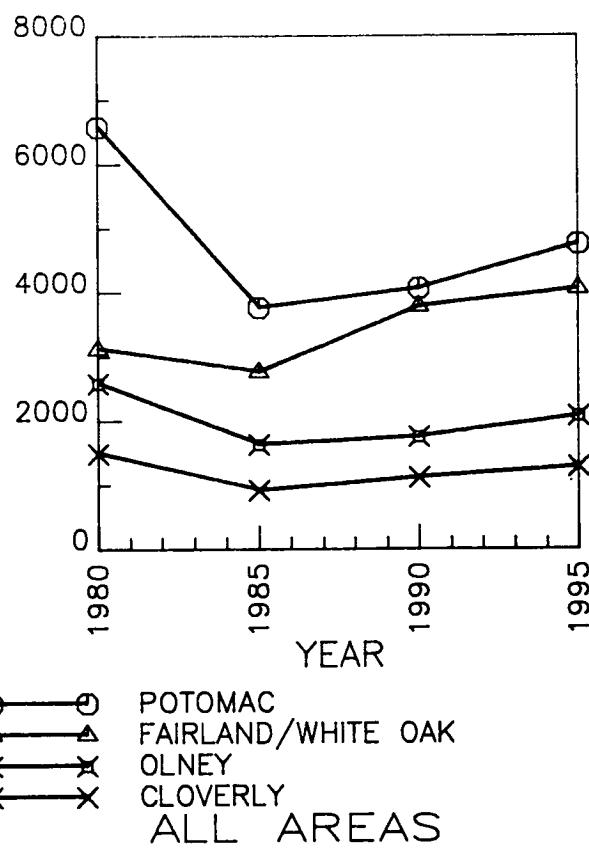
Chart 3

FORECAST OF ELEMENTARY SCHOOL AGE CHILDREN

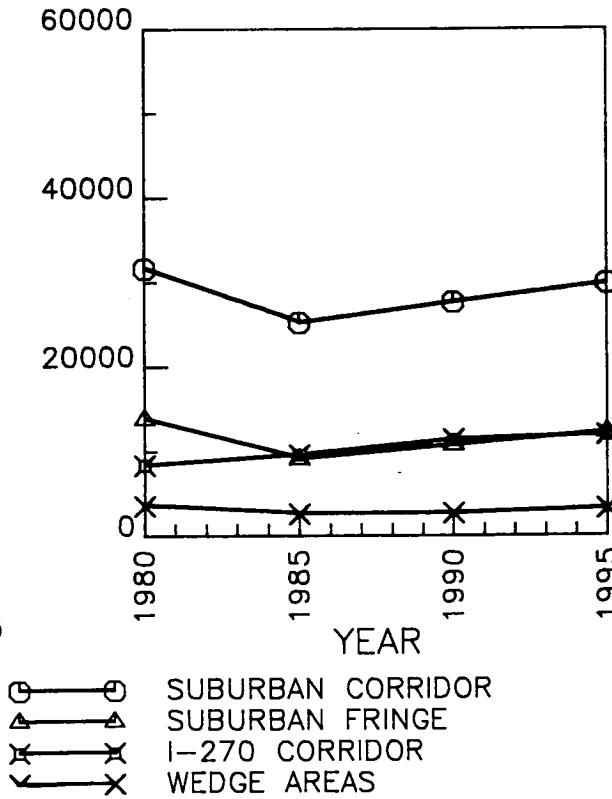
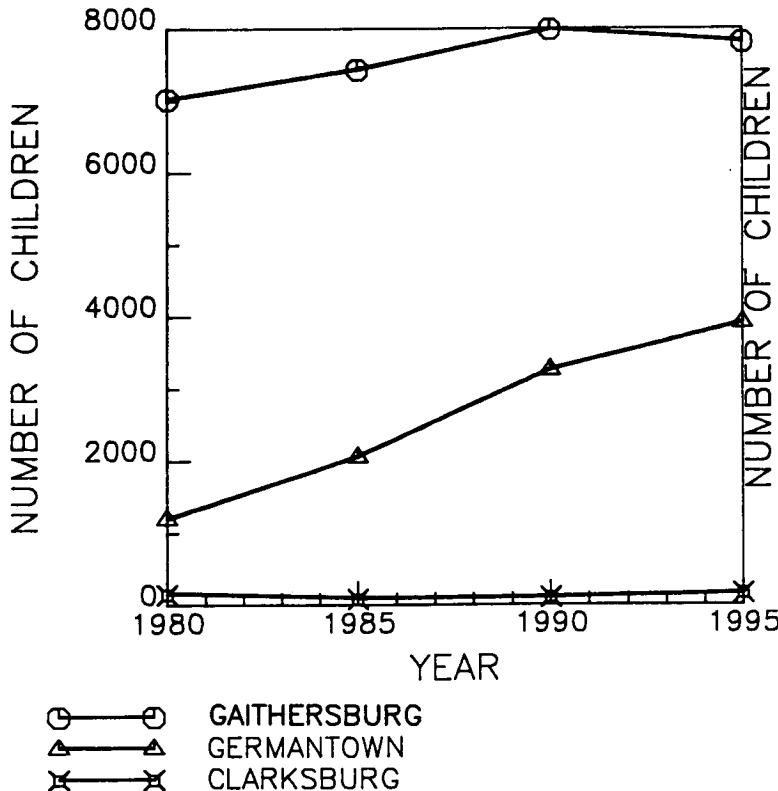
SUBURBAN CORRIDOR



SUBURBAN FRINGE



I-270 CORRIDOR



Population Density

The density pattern of the County follows the County's General Plan of Wedges and Corridors. Regardless of overall density of individual areas, highest population concentrations are encountered along major transportation routes. Lowest densities will continue to occur within geographic and planning areas preserved for agriculture and open space.

The densities found in Table 7 should not be taken as reflecting homogenous development. Within each of the respective areas there will be irregularities of higher and lower density concentrations.

Prospective population density changes in Montgomery County will reflect the following internal dynamics: (1) reduced densities within close-in suburbs where average household sizes have been declining and where the built-up nature of these areas preclude substantial, additional new construction; (2) increasing development in the outlying growth suburbs, which have and will continue to receive the bulk of new, single family housing construction, and whose occupants will reflect comparatively larger average household sizes; and (3) more intensive development of large tracts of vacant land in selected intermediate areas. Categories (2) and (3) are not mutually exclusive.

Examples of the first-mentioned are encountered in such planning areas as Takoma Park, Bethesda and Kensington-Wheaton. Outlying suburbs whose densities will increase as a result of new, additional single family construction are typified by Germantown and Gaithersburg. Intermediate areas with large building tracts suitably zoned for higher densities are White Oak and Fairland in the eastern end of the County.

Of special note is the fact that over one-third of the County's geographical area, even by the end of the decade, will continue to have a distinctly rural character. A density of 500 persons per square mile, by urban planning standards, is considered to be sparse, viewed in light of the much higher densities encountered within the established, older, close-in County suburban areas and the District of Columbia. A 500 person per square mile density translates itself into only one person per acre.

The most dramatic changes in County population density are expected in the major growth corridors, particularly Germantown. By 1990, the Germantown area is expected to take on many of the characteristics of a "corridor city," with densities expected to increase nearly threefold, from 658 persons per square mile to over 1,700. This will constitute roughly 13 percent lower density than Gaithersburg in 1980.

TABLE 7
POPULATION DENSITY BY PLANNING AREA
1980 and 1990

Planning Area	Square Miles	Estimated Population 1980	Density People/Sq. Mile 1980	Population 1990	Density People/Sq. Mile 1990
SILVER SPRING	6.8	54,600	8,029	53,600	7,882
36 Silver Spring	4.3	29,650	6,895	31,500	7,326
37 Takoma Park	2.5	24,950	9,980	22,100	8,840
BETHESDA	20.9	80,400	3,847	76,300	3,651
35 Bethesda	20.9	80,400	3,847	76,300	3,651
NORTH BETHESDA	23.0	75,800	3,295	75,000	3,261
26 Rockville	14.0	45,300	3,236	41,900	2,993
30 N. Bethesda	9.0	30,500	3,389	33,100	3,678
KENSINGTON-WHEATON	34.1	155,350	4,556	143,500	4,208
27 Aspen Hill	13.2	47,750	3,617	44,500	3,371
31 Wheaton	14.9	75,500	5,067	69,000	4,631
32 Kemp Mill	6.0	32,100	5,350	30,000	5,000
I-270 CORRIDOR	62.8	73,600	1,172	110,800	1,764
13 Clarksburg	15.4	1,200	78	1,200	78
19 Germantown	15.8	10,400	658	27,100	1,715
20/21 Gaithersburg	31.6	62,000	1,962	82,500	2,611
COLESVILLE	36.5	46,900	1,285	61,400	1,682
28 Cloverly	13.2	11,400	864	13,500	1,023
33 White Oak	10.0	26,000	2,600	27,300	2,730
34 Fairland	13.3	9,500	714	20,600	1,549
POTOMAC	72.5	48,550	670	51,800	711
24 Darnestown	18.0	4,800	267	6,300	350
25 Travilah	23.0	5,850	254	6,500	283
29 Potomac	31.5	37,900	1,203	39,000	1,238
OLNEY	49.7	17,100	344	20,700	416
23 Olney	49.7	17,100	344	20,700	416
DAMASCUS	92.9	19,300	208	22,000	237
10 Bennett					
11 Damascus	75.9	14,900	196	17,200	227
14 Goshen					
15 Patuxent					
22 Rock Creek	17.0	4,400	259	4,800	282
POOLESVILLE	106.8	7,400	69	6,900	65
12 Dickerson					
16 Martinsburg					
17 Poolesville	106.8	7,400	69	6,900	65
18 Lower Seneca					
TOTAL COUNTY	506.0	579,000	1,138	622,000	1,229

Source: M-NCPPC Special Projects Division

Note: 1980 figures are estimates made by combining census block data to the planning area geography. 1985 and 1990 forecasts were prepared by the MCPB staff. The forecasts are revisions to the forecast developed as part of the Sixth Growth Policy Report, Land Demand, November 1980, based upon the 1980 Census and recent demographic and housing construction trends. A new forecast will be prepared in Spring of 1983 when the Regional Cooperation Forecast process completes its third round of revisions. The regional effort will provide a consistent set of forecasts for the Washington Region.

Employment

M-NCPPC works within the context of the periodic regional totals supplied by the Metropolitan Washington Council of Governments (COG) Cooperative Forecast to predict prospective County employment levels. Because Montgomery County is closely tied to the entire regional economy, utilization of these common benchmark data minimizes potential errors and advances forecasting consistency among the separate regional planning bodies.

The high employment forecast indicates an average employment gain of some 5,800 employees per year over the next five years. The low forecast is for some 4,500 employees per year. These projections could easily be accommodated by the County's non-residential construction rate. Actual annual job growth has reflected great year-to-year fluctuations. Between 1978 and 1979 the County increased at-place employment by 17,000 employees. The following year this growth slowed to 5,000.

The currency of the most recent Cooperative Forecast however, has been eroded on the short term by the ongoing economic recession and the federal employment growth assumption. The next scheduled Round III Cooperative Forecast will attempt to accommodate these economic uncertainties. Recent at-place employment estimates and non-residential construction activity will be incorporated into the regional exercise.

Despite substantial diversification gains in the Washington regional economic base, federal employment remains a critically important source of area jobs. The full impacts of the current Administration's drive to reduce federal program outlays and associated employment particularly in the income transfer and regulatory areas, are yet to be realized, and these introduce uncertainties into job forecasting. Additionally, the ripple effects of these federal cutbacks are uncertain. While, for example, it is anticipated that expanded Defense Department outlays will create substantial hiring opportunities among private consultant firms, it is already known that cutbacks in selected income transfer programs administered through the individual states have already caused layoffs among state employees who serve those programs.

Federal employment in the Washington area peaked in 1980 at nearly 366,000. The D.C. Department of Employment Services reported a June 1982 federal employment level of approximately 354,000, a reduction of 12,000. Continuing reductions in programs and payrolls are expected to reduce federal employment by an additional 32,000, or a total of 44,000, bringing these jobs back to 1970 levels.

The great bulk of the above reduction has been accomplished through attrition, i.e., establishment of hiring freezes and dependence upon voluntary separations. Separations through reductions-in-force (RIF) have, as yet, been relatively modest, but the Washington area has suffered disproportionately. Nearly one-fourth of all federal RIF's have occurred in the Washington region, despite the fact that the region accounts for only 12.5 percent of total federal employment. Extensive RIF's have reportedly occurred in regulatory agencies which, characteristically, are Washington-located.

From the standpoint of its relative position within the entire area economy, the County's share of total regional jobs has shown continuous gain, rising from 15.6 percent in 1970 to 17.8 percent in 1980. Greatest County job growth has occurred in services and in the retail sectors. During 1975-1979, nearly one-third of County job gains occurred in services, and an additional one-seventh in retail. Correspondingly, more recent data (1979-1981) provided by the Maryland Department of Human Resources show that for the three-county area of Montgomery, Prince George's, and Charles, service jobs constituted

TABLE 8
MONTGOMERY COUNTY AT-PLACE EMPLOYMENT
MARCH 1978 - MARCH 1980

Major Industrial Sectors	1978	1980	Increase Between 1978 & 1980
Agriculture & Mining ¹	1,290	1,504	214
Construction ¹	24,226	27,131	2,905
Manufacturing ¹	16,547	17,570	1,023
Transportation, Communi- cation & Public Utilities ¹	7,274	8,458	1,184
Wholesale Trade ¹	8,260	8,626	366
Retail Trade ¹	48,140	51,240	3,100
Finance, Insurance & Real Estate ¹	21,323	21,622	299
Services ²	70,176	79,150	8,974
Other ² (Self employed nonclassifiable)	15,700	16,200	500
Federal ³ (Including military)	44,086	47,222	3,136
State and Local ⁴	<u>22,900</u>	<u>23,000</u>	<u>100</u>
Total At-Place Employment	279,922	301,723	21,801

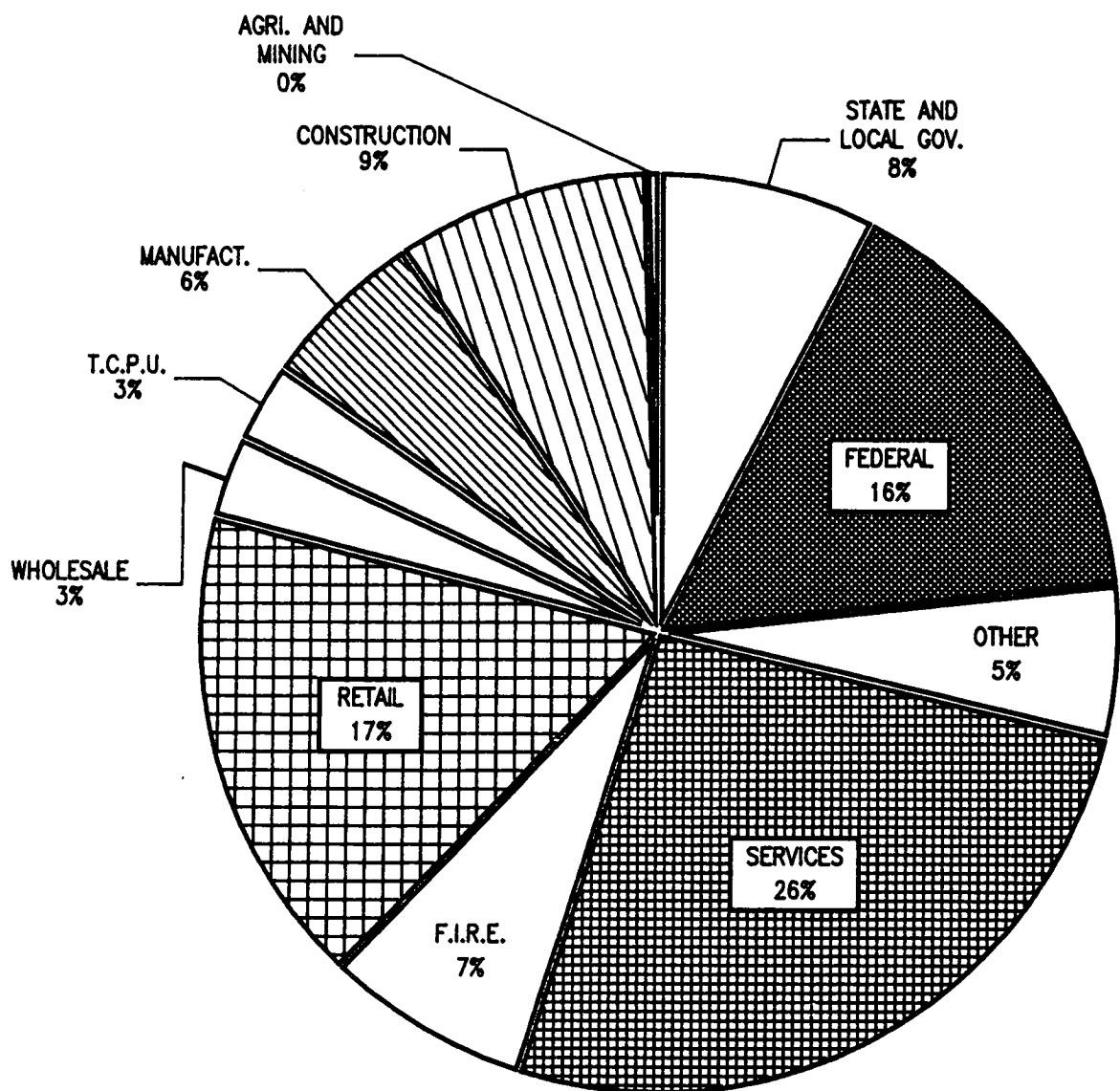
¹ County Business Patterns, U.S. Department of Commerce, Bureau of the Census.

² County Business Patterns, M-NCPPC estimate.

³ National Capital Planning Commission.

⁴ MCPB Research and Special Projects Division estimate, Montgomery County and State of Maryland employment data.

MONTGOMERY COUNTY AT-PLACE EMPLOYMENT
MARCH 1980



See Table 8 for data

SOURCE: Montgomery County Planning Board, Research and Special Projects Division,

the fastest growing employment sector, accounting for a 13,100 job gain, or 10.7 percent. Wholesale and retail jobs during the same period grew by 3,500, or a gain of 2.7 percent. Interestingly, the decline in rate of growth of retail and wholesale jobs supports speculation that retail activity has saturated the County, and that future growth will be largely confined to consumer goods outlets serving residential growth areas.

Table 8, derived from U.S. Department of Commerce County Business Patterns data, shows at-place job gains for Montgomery County 1978-1980. These data show, in addition to growth in services and retail, significant gains occurred in transportation, communications, and public utility sectors.

Effects of the recession are shown in current Maryland Department of Human Resources data for the three-county area. These show, for the June 1981 to June 1982 period, a net loss of 9,400 jobs. Government suffered the greatest reductions, 8,200, and construction followed with 6,300. Offsetting these were gains of 5,100 in private employment.

Montgomery County has several advantages which will help it to ride out the current recession and help maintain its advantageous competitive job position within the region. Its concentration of high-tech industries, principally in the I-270 Corridor, should allow it to compete effectively for expanded Defense Department contracts. Forty percent of its population aged 25 and over have college degrees, qualifying them for the types of managerial and technical jobs most resistant to employment cutbacks.

Long-term national employment analyses suggest that the greatest potential job growth areas will be related to information and "conservation." Information will include jobs in computers, biotechnology and transmission technologies, such as lasers and fiber optics. Conservation, in addition to expanded services in health maintenance and therapy, will deal with such fields as solar energy, more efficient use of raw materials, and waste disposal. Montgomery County has already attracted such new industries, e.g., telecommunications via satellite channel, biogenetic engineering, and a substantial array of computer programming contractors and software firms. Following established patterns of plant location, new firms will tend to cluster around existing firms. The large employment reservoir of experienced technicians already in the area will help to attract these new industries.

The County possesses sufficient land to provide the "campus" work facilities preferred by many of the new technology employers. One can hope that Montgomery County will be able to attract these new technology firms, and thus retain its competitive regional position, providing a pace-setting role for recovery and growth in the entire region.

III
STATUS

COMPREHENSIVE
PLANNING
POLICIES

STATUS OF RESIDENTIAL DEVELOPMENT IN MONTGOMERY COUNTY

Summary and Conclusions:

Montgomery County housing production has been declining, paralleling nationwide and metropolitan area trends. The nationwide economic recession is felt in the National Capital Area, and job and income uncertainty are inhibiting area housing production and sales. High mortgage interest rates contribute to excessive monthly housing expense levels, substantially undercutting market potential. Builders are shifting to lower-priced townhouse development to meet the sales housing market more effectively. Excessive interest rates and wind-down of federal assistance programs are bringing County rental housing production to a near standstill. Available County production indicators suggest a one-third housing production decline in 1982 over 1981, from 4,900 to approximately 3,500 units. Most recent reductions in mortgage interest rates and a slow-paced recovery from current recession are likely to modestly raise 1983 production levels.

Montgomery County Is Not "Recession Proof"

The current economic recession and the preceding recession of the early 1970's have evidenced that the Washington, D.C. Standard Metropolitan Statistical Area (SMSA), of which Montgomery County is a part, is not recession proof. The area's national and international headquarters' functions have shielded the local economy from short-term, modest-scale economic downturns. When sufficiently severe and extended, however, these recessions inevitably adversely impact the region's well-being. During this current recession, the June 1982 metro area unemployment rate of 6.3 percent (by place of residence) was 31 percent higher than the 4.8 percent rate of March 1981. During the same 15 month period, the corresponding County's unemployment rate rose from 3.4 percent to 4.8 percent, an increase of 41 percent. Both of these rates, it should be noted, are still substantially lower than the national midyear unemployment rate of 9.5 percent.

The homebuilding industry, because of its dependence upon buyer confidence and earning expectations, has proven especially sensitive to economic downturns. Scarcity and high price of mortgage funds during the first three quarters of this year substantially increased monthly carrying costs and additionally undercut potential effective demand.

Building Permits Reflect Economic Trends

...The 1973-1975 Recession

Previous evidence of the SMSA's and County's non-immunity to adverse economic influences was the precipitous drop in building permit activity caused by the 1973-1975 recession. The number of units covered by permits in the SMSA dropped from 36,542 units in 1973 to less than half that amount, 15,396, in 1974 and to only one-fourth in 1975, 9,275 units. Montgomery County's comparative decline was even more severe. County permits in 1974 covered only 1,632 units, a 79 percent drop from the 7,802 units of the previous year; 1975's units, 1,935, reflected a 75 percent decline from 1973. This is shown in Table 12, which sets forth levels of permit issuances for the SMSA and for its separate jurisdictions. This table also shows each jurisdiction's percentage share of total permits.

In terms of building permits, the County's homebuilding recovery from the 1973-1975 recession reflected nearly uninterrupted progress between 1976-1979. Units covered by permits rose from the 1,632 low of 1974 to 5,683 units in 1980, but began their current decline in 1981.

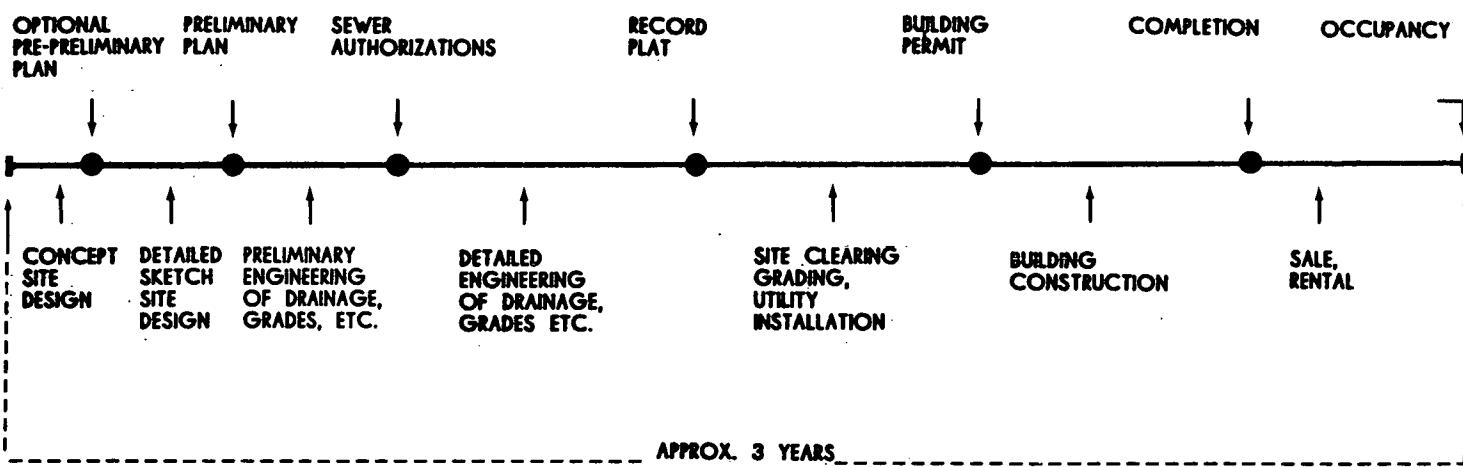
TABLE 9

MONTGOMERY COUNTY DEVELOPMENT REPORT FOR 1981
 (Number of Permits and Actions Processed Between January and December 1981)

	Single-Family Detached Units	Town- house Units	Multi- Family Units	Total Housing Units
RESIDENTIAL				
Sewer Authorizations Issued	3,609	6,995	739	11,343
Pre-Preliminary Plans Approved (87 Plans)				
Preliminary Plans Approved (249 Plans)	2,783	3,414	208	6,405
Plats Recorded (487 Record Plats)	2,037	4,499	1,814	8,350
Building Permits Issued	1,480	1,408	609	3,497
Completions	1,733	2,556	590	4,879
Demolitions	33	0	0	33
COMMERCIAL				
Sewer Authorizations Issued				2.9 Million Square Feet - Gross Floor Area
Completions				4.1 Million Square Feet - Gross Floor Area

Table 10

**SCHEMATIC DIAGRAM
OF
PERMIT APPROVAL PROCESS**



SOURCE: Montgomery County Planning Board, Research and Special Projects Division.

The County's share of metro area permits since 1972, with the exception of 1974 and 1977, has tended to hover around one-fifth of the total. In 1980 and in 1981, the County share approached 30 percent. Interestingly, for the first six months of 1982, Montgomery's share exceeded that of Fairfax County, which has led the SMSA since 1971.

...The Current Recession

Effects of the current national recession upon new housing activity in the SMSA manifested themselves in 1980 when units covered by permits declined by 5.5 percent from the previous year.

Within Montgomery County, permit issuance for the first six months of 1982 lagged behind amounts for the counterpart period of 1981, 2,309 units, as compared to 2,633. This might initially suggest that the County's homebuilding decline has not been as severe as suggested. Permits, however, provide only one approximation of prospective building activity. A more sensitive indicator is the rate of housing completions, since these essentially represent builder response to actual sales. Speculative builders will postpone construction starts in the face of lagging sales. During the first six months of 1982, housing completions in the County totaled 979 units compared to 2,023 for the preceding year's first five months. This constitutes more than a one-half reduction.

...National, SMSA, County Permit Activity Comparisons

Housing economists point out that the national housing production decline preceded the current economic recession, and that the industry has been in a continuous downturn for the 40-plus months since the end of 1978. Nationwide housing starts in 1978 totaled over 1.8 million units; during 1981, starts had plummeted to nearly 61 percent of the 1978 rate, to only 1.1 million.

National housing start estimates, previous to release of the May 1982 Department of Commerce building permit reports, had placed estimated 1982 starts below one million units. A May upsurge in subsidized multi-family permit activity raised the estimated, seasonally-adjusted annual start rate to over one million, and most recent industry reaction to reduced mortgage interest rates has raised the current estimate to 1.2 million.

The June 1982 Census Report of new one-family houses for sale indicated a nationwide annual rate of new home sales amounting to only 343,000 units, the lowest level registered since the data series was initiated in 1963.

Montgomery County 1980 building permit activity ran counter to the SMSA's, as shown in Table 12. In 1981, however, the SMSA and County declines matched each other.

The County's share of total SMSA permit activity showed substantial increases during 1980-1981 and the first six months of 1982. This gain reflected the comparative strength of the County's sales housing market vis-a-vis the entire metro area. Of equal importance has been the County's substantial participation in HUD's several subsidized rental housing programs.

In 1975, Montgomery County exhibited a bellwether role in housing recovery, registering a turnaround gain in permit activity, while the SMSA continued its decline. The volume and character of the County's current pre-construction indicators, e.g., approved preliminary plans, recorded plats, and sewer authorizations, suggest that the

TABLE 11
BUILDING PERMITS, BY SELECTED JURISDICTION
WASHINGTON METROPOLITAN AREA
1974-1982

<u>Number (#)</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>Jan./June 1982</u>	<u>Total</u>
Montgomery Co.	1,629	1,904	3,300	3,616	4,255	4,857	3,960	3,497	2,309	29,382
Washington, D.C.	1,383	446	1,987	2,194	2,575	1,652	2,647	981	329	14,094
Prince George's Co.	2,833	1,490	2,049	3,260	2,240	2,469	1,893	1,853	574	18,661
Fairfax Co.	4,834	3,157	5,724	9,908	8,046	8,423	6,788	5,875	2,082	54,837
TOTAL	10,679	6,997	13,060	18,978	17,116	17,401	15,288	12,206	5,194	116,919

<u>Percent (%)</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>Jan./June 1982</u>	<u>Total</u>
Montgomery Co.	15.3	27.2	25.2	19.0	24.9	27.9	25.9	28.6	44.46	25.1
Washington, D.C.	13.0	6.4	15.2	11.6	15.0	9.5	17.3	8.0	4.41	12.1
Prince George's Co.	26.5	21.3	15.7	17.2	13.1	14.2	12.4	15.2	11.06	16.0
Fairfax Co.	45.3	45.1	43.8	52.2	47.0	48.4	44.4	48.1	40.09	46.9
TOTAL	100.0	100.0								

SOURCE: Montgomery County data, 1974-1981, from the Department of Environmental Protection, Montgomery County; all other data from U.S. Census C-40 Building Permits and Public Contracts Reports.

NOTE: Percentage detail may not add to total due to rounding.

TABLE 12

DISTRIBUTION OF RESIDENTIAL BUILDING PERMIT AUTHORIZATIONS ISSUED IN
WASHINGTON METROPOLITAN AREA SMSA FROM 1970 - JUNE 1982 BY JURISDICTION

		1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	Jan./June 1982
DISTRICT OF COLUMBIA	Number Units	1,913	834	591	1,790	1,226	436	1,968	2,194	2,211	1,742	2,642	649	229
	Percent Units	6.95	2.21	1.38	4.90	7.96	4.70	11.65	9.10	9.53	8.35	13.40	4.61	3.58
ALEXANDRIA	Number Units	387	1,127	2,811	2,393	3,145	987	683	544	635	330	568	311	60
	Percent Units	1.41	2.98	6.57	6.55	20.43	10.64	4.04	2.26	2.74	1.58	2.88	2.21	.94
ARLINGTON COUNTY	Number Units	523	665	121	1,662	219	189	418	985	722	656	563	595	216
	Percent Units	1.90	1.76	.28	4.55	1.42	2.04	2.47	4.08	3.11	3.14	2.86	4.23	3.38
FAIRFAX ¹ COUNTY	Number Units	8,103	13,523	17,429	11,428	4,288	3,521	5,996	10,014	8,361	8,380	6,563	4,772	2,082
	Percent Units	29.45	35.79	40.74	31.27	27.85	35.05	35.48	41.52	36.02	40.14	33.30	33.90	32.55
LOUDOUN COUNTY	Number Units	519	2,028	1,587	1,360	1,122	224	492	904	743	463	342	378	290
	Percent Units	1.89	5.37	3.71	3.72	7.29	2.42	2.91	3.75	3.20	2.22	1.74	2.69	4.54
PRINCE WILLIAM COUNTY	Number Units	2,579	4,146	3,771	3,332	931	800	1,724	2,293	2,997	2,155	1,643	1,507	638
	Percent Units	9.37	10.97	8.82	9.12	6.05	8.63	10.20	9.51	12.91	10.32	8.34	10.70	9.98
MONTGOMERY ² COUNTY	Number Units	8,287	10,377	10,514	7,802	1,632	1,935	3,569	3,926	5,122	4,676	5,683	4,031	2,309
	Percent Units	30.12	27.46	24.58	21.35	10.60	20.86	21.12	16.28	22.07	22.41	28.83	28.63	36.09
PRINCE GEORGE'S COUNTY	Number Units	5,206	5,085	5,953	6,775	2,833	1,453	2,049	3,260	2,420	2,459	1,706	1,835	574
	Percent Units	18.92	13.46	13.92	18.54	18.40	15.67	12.12	13.52	10.43	11.78	8.66	13.03	8.98
TOTAL	Number Units	27,517	37,785	42,777	36,542	15,396	9,545	16,899	24,120	23,211	20,861	19,710	14,078	6,398
	Percent Units	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

¹ Includes data for the cities of Fairfax and Falls Church.

² Includes data for the cities of Rockville and Gaithersburg.

SOURCE: Metropolitan Washington Council of Governments, Department of Human Resources.

County may possibly display this same bellwether role again in recovery from the current building depression.

A Major Culprit, High Mortgage Interest Rates

Aside from the market-depressing effect of the current recession, which is reflected in apprehension of prospective buyers to undertake substantial, long-term mortgage indebtedness during periods of job and income uncertainty, there is virtually unanimous agreement that the heretofore exceedingly high price of mortgage money has been a major cause of the current housing production and marketing decline.

During the first quarter of 1980, nationwide mortgage interest rates approached 17 percent. Industry optimism occurred in mid-1980 when rates dropped to 12.5 percent; shortly thereafter, however, they began a steady, uninterrupted increase, peaking in November 1981 at over 18 percent. Most recently, Federal Reserve policy changes with regard to money supply and recession-incurred diminished demand for credit from industry and consumers have resulted in a sharp drop in mortgage interest rates, with conventional fixed rate mortgages being offered at or below 14 percent.

The market-inhibiting effects of high-priced mortgage money cannot be sufficiently emphasized. Debt service (payment to principal and interest) costs parallel mortgage interest rate increases. They rise by approximately one-third when increased from 12 to 16 percent. The National Association of Home Builders (NAHB) estimates that as many as 5.2 million potential new home buyers nationwide drop out of the market when interest rates rise from 12 to 16 percent. Their analysis model assumes a \$60,000 mortgage amortized over 30 years and a housing expense ratio of 25 percent.

...The Outlook for Mortgage Rate Reduction

Despite most recent interest rate declines, the long-term outlook for substantial, mortgage interest rate reduction is not optimistic. Prospective fiscal year 1983 federal budget deficits matching or exceeding the Congressional goal of \$100 billion will substantially increase the federal government's borrowing activities. It has been estimated that federal borrowing may potentially claim over 70 percent of available net gains in savings resources.

Anticipated recovery from the current recession, even if modest in pace and scope, will cause increased claim for available credit from industry, business, and consumers. There is consensus among a number of economists that mortgage interest rates may continue to decline moderately for the remainder of 1982 and possibly into early 1983, but shortly thereafter, they will tend to climb back to at least their present levels.

New Rental Housing Production, a Nearly Vanishing Commodity

Aside from current investor predispositions for liquidity and avoidance of long-term commitment, the current relatively high price of mortgage money has made it virtually impossible to produce competitive and marketable rentals. The debt service costs for a rental unit with a \$50,000 mortgage, 40 year term, at 8 percent interest would be \$278; at a 13 percent rate, the equivalent debt service amount is \$158 greater, amounting to \$436. Such units might require monthly gross rents of at least \$700, taking into account taxes, utilities, management and operation, vacancy allowances, and profits. These rents would substantially exceed the rents of units with comparable amenities produced at lower

financing. Competitively, they compare bleakly with a 1980 County median gross rent of \$342, as reported by the Bureau of the Census.

The high interest constraints, coupled with growing consumerism, uncertainty over control of energy and other operating expenses, and reduced profit levels have caused a very substantial falloff in new, unsubsidized, market-rate rental housing production: A turnaround is possible if interest rates fall substantially. Activity in the multi-family area will be continually monitored.

... Analyzing Multi-Family Permits

In 1972, nationwide multi-family units covered by permits amounted to nearly 1.1 million units; by 1981, the level had declined by more than one-half, to 458,000 public and private units.

The above decline becomes even more profound when adjustment is made for multi-family starts represented by condominium (for sale) units and for subsidized rental housing production. NAHB has analyzed the characteristics of 1981's 381,000 private multi-family starts. Some 13 percent were HUD-subsidized Section 8 units. Among 289,000 multi-family units in structures with five or more units, 40 percent were condominiums. Only one-third of all multi-family starts (structures with two or more units) were represented by unsubsidized rentals. This is compared to 65 and 56 percent, respectively, for 1975 and 1976, according to the same NAHB analysis. According to NAHB, new unsubsidized rentals have been concentrated in the southwest energy centers. They anticipate multi-family gains to occur in the condominium sector. Below market rate of interest financing from state and local government mortgage revenue bonds will support modest amounts of new rental housing production.

... SMSA Rental Housing Permit Activity

A May 1982 rental market analysis of the SMSA by the D.C. HUD Area Office shows that rental housing's share of total housing production has been steadily and substantially declining. In 1970, rental housing accounted for 41 percent of all SMSA building permit activity. It declined to 20-25 percent during 1972-1977 and dipped sharply thereafter. The 1978 ratio was only 18 percent and fell to only 7 percent in 1981, reflecting a phase out of HUD subsidized (Section 8 and Tandem financed) rental programs.

... Cessation of Unsubsidized, Market Rate Rental Housing Production

Of startling significance is the virtual cessation of market-rate, unsubsidized rental housing production in the Washington area. Of 1,115 rental units covered by permits in 1981, according to the HUD report, 476 were subsidized (predominantly Section 8), and 629 were financed under HUD's GNMA Tandem program at a below-market rate of interest. Only 10 units in 1981, 1 percent of total rental activity, were represented by market-rate, unsubsidized production.

Montgomery County's future housing production achievements will depend predominantly upon sales housing production, either single family or condominium. In the offing is prospective production of some 500 units of revenue bond financed housing to be developed under the County's Department of Housing and Community Development Rental Supplement Program. Twenty percent of these units will be subsidized for lower income households, with subsidy funds provided from the County's condominium transfer tax. Additional modest augmentation of the County rental inventory may also come from

delayed entry of previously approved HUD subsidized housing into the production pipeline. Future HUD subsidized new rental housing production will be extremely limited in amount, probably consisting of no more than 100-200 units of elderly housing per year for the entire Metro area.

Affordability

Affordability analysis for Montgomery County is made complex by the availability of alternative housing choices for prospective buyers, e.g., single-family detached, single family-attached, new condominium, and condominium conversions. New condominium construction has tended, because of its frequently more expensive high-rise nature and monthly association fees, to constitute higher-priced housing. Affordability analysis is limited herein to single-family units.

(Note: County usage groups all attached single family construction, e.g., straight-through, back-to-back, "piggy-back," and combinations thereof into the "townhouse" designation. This inclusive type is used hereinafter to describe all attached housing.)

New single family housing in the County has been financed with a wide variety of mortgage instruments, with most intended to facilitate buyer credit qualification on the basis of lower initial debt service charges. It is estimated that over one-half of SMSA new housing sales offerings involve builder "buy-down" of market interest rates for four-to-five year periods. Most recent declines in mortgage interest rates have brought conventional loan rates to approximately 14 percent, and this is the amount used for the following affordability calculations.

A Prototype Sales Price and Premised Terms for New Sales Housing

The Metropolitan Washington Council of Governments, using privately collected information from the Housing Data Report firm, provided January 1981 estimates of median prices achieved for various new sales housing types in Montgomery County. On the basis of these and adjusting for modest inflationary increases since that date, the County's median sales price for a prototype single family unit, weighted proportionately for detached and townhouse structures, would be approximately \$102,500 in 1982.

The calculations which follow are premised on 75 percent mortgage coverage, 30-year term, and 14 percent interest. Debt service under these conditions would amount to approximately \$900 a month; estimated total monthly housing expenses might total \$1,200.

The Market Potential for New Sales Housing, Montgomery County

On the basis of one-fourth expenditure of monthly pre-tax income for total housing costs, an annual household income of \$57,600 would be required to purchase a prototype sales unit under the afore described terms. On the basis of a one-third expenditure ratio, the annual income would have to be \$43,200. The two average out to approximately \$50,000.

The household income distribution currently estimated for the County, suggests that about 32.0 percent of County households could afford such housing under the previously described conditions. This would currently amount to some 69,000 households. The great bulk of these would currently be owners; little more than 10.0 percent of renter households have high enough incomes to afford the afore described costs.

Only a fraction of the market potential would effectively enter the new sales housing market during any single year. The 1977 Annual Housing Survey for the Washington SMSA suggests that sales housing turnover occurs about once every eight years; rental housing turnover, about every three years.

Dynamic Indicators, Montgomery County

... .Builder Subdivision Plans

During 1981, builders obtained preliminary plan approval for 2,783 detached single family units, the lowest level since the recession years of 1974-1975. The 1981 level is some 3,200 less than 1980's and about 2,000 less than 1979's. The 1981 decline in subdivision plans for townhouse units was much smaller, some 2,400 units less than 1980. However, the total of 3,414 was greater than 1979's 1,582.

A brief evaluation of approved subdivision plans (Table 13) suggests the following two conclusions:

1. Plans for ordinarily more expensive single family detached units are very sensitive to economic conditions. Lowest levels of proposed detached starts were evidenced during the recession of 1974-1975 and most recently in 1981.

2. Builders shift to more affordable townhouse construction during economic downturns. In the recession year of 1975, proposed townhouse sales units outnumbered detached units by nearly fourfold. After constituting less than half of single family plans between 1976-1979, proposed townhouse units nearly matched plans for detached single family units in 1980, and actually exceeded the proposed amount in 1981.

... .Recorded Plats

An additional indicator of prospective homebuilding activity is developer recordation of plats. In the sequence of construction, such recordation follows approval of subdivision plans and precedes building permit issuance.

Table 14 shows the number of recorded plats in Montgomery County by structure type for 1972-1981. The production mix pattern for recent years is similar to the mix contained in approved subdivision plans. With onset of the current recession, builders have shifted contemplated production to more affordable townhouses. The proportion of more expensive detached housing units contained in recorded plats declined from 56.3 percent in 1979 to only 24.4 percent in 1981, a proportionate reduction of nearly 57 percent.

Aside from the above proportionate shift, builders have, surprisingly, in the face of a declining housing market, more than doubled the amount of recorded plats for townhouse development in 1981, as compared to 1980. Detached sales housing plats also increased, but only moderately.

Subdivision planning and plat recordation represent first-approximation builder adjustments to market expectations. The expenses for these pre-construction activities, while not insignificant, are only preliminary to the much larger costs represented by high interest construction loans required for actual development. As builders advance in the development process, their production decisions necessarily become pragmatic and are fine-tuned to market realities.

CHART 4

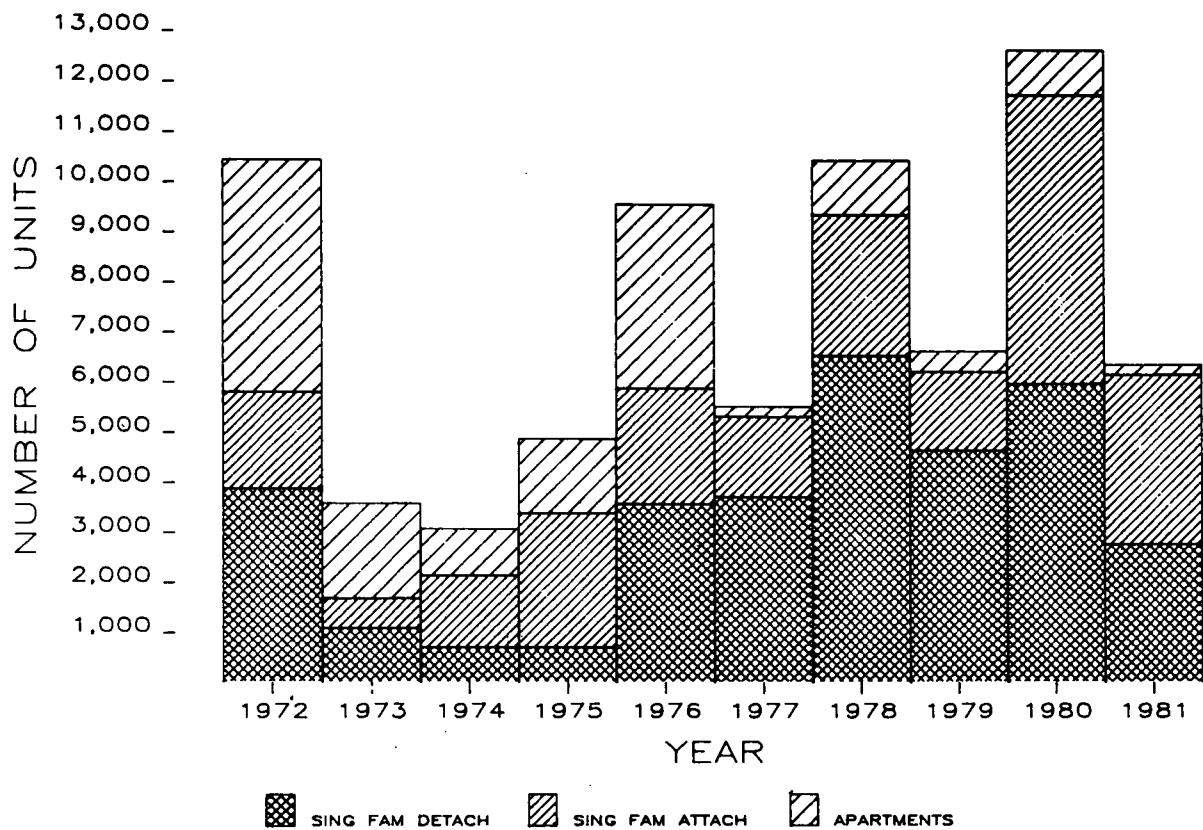
APPROVED PRELIMINARY SUBDIVISION PLANS BY STRUCTURE TYPE
MONTGOMERY COUNTY 1972 - 1981

TABLE 13
APPROVED PRELIMINARY SUBDIVISION PLANS, BY STRUCTURE TYPE
MONTGOMERY COUNTY
1972-1981

Period	SF Detached Number	SF Detached Percent	SF Attached Number	SF Attached Percent	Apartments Number	Apartments Percent	Total Number	Total Percent
Jan.-Dec. 1972	3,882	37.1	1,934	18.5	4,639	44.4	10,455	100.0
Jan.-Dec. 1973	1,089	30.3	600	16.7	1,908	53.0	3,597	100.0
Jan.-Dec. 1974	741	23.7	1,444	46.2	942	30.1	3,127	100.0
Jan.-Dec. 1975	705	14.4	2,700	55.1	1,492	30.5	4,897	100.0
Jan.-Dec. 1976	3,593	37.4	2,315	24.1	3,689	38.4	9,597	100.0
Jan.-Dec. 1977	3,735	67.2	1,611	29.0	208	3.7	5,554	100.0
Jan.-Dec. 1978	6,575	62.7	2,821	26.9	1,093	10.4	10,489	100.0
Jan.-Dec. 1979	4,679	70.1	1,582	23.7	418	6.3	6,679	100.0
Jan.-Dec. 1980	6,019	47.3	5,792	45.5	909	7.2	12,720	100.0
Jan.-Dec. 1981	2,783	43.5	3,414	53.3	208	3.2	6,405	100.0
TOTAL-Jan. 1972-Dec. 1981	33,801	46.0	24,213	32.9	15,506	2.1	73,520	100.0

SOURCE: Montgomery County Planning Board, Research and Special Projects Division.

NOTE: Does not include preliminary plans from the incorporated cities of Gaithersburg and Rockville.

CHART 5

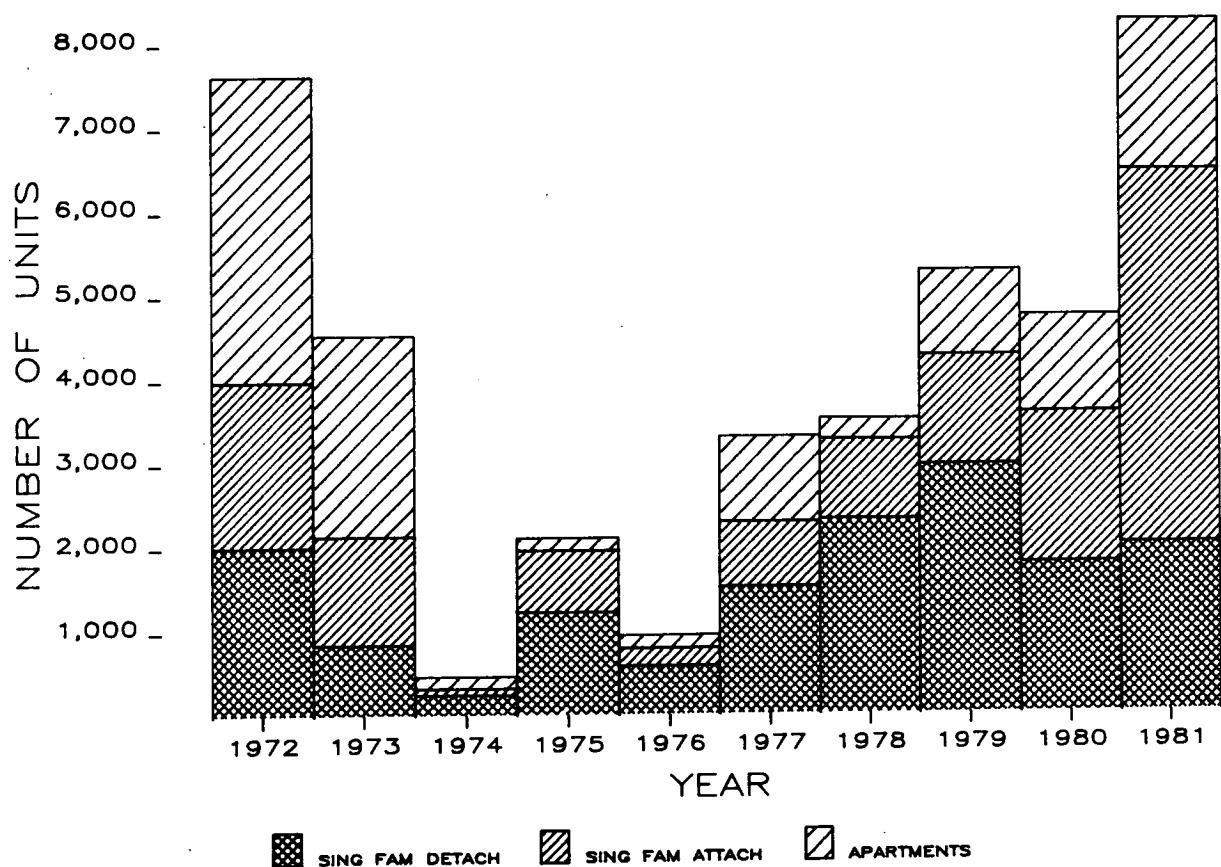
RECORD PLATS BY STRUCTURE TYPE
MONTGOMERY COUNTY 1972 - 1981

TABLE 14
RECORDED PLATS, BY STRUCTURE TYPE
MONTGOMERY COUNTY
1972-1981

Period	SF Detached		SF Attached		Apartments		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Jan.-Dec. 1972	2,013	26.4	1,973	25.8	3,647	47.8	7,633	100.0
Jan.-Dec. 1973	849	18.7	1,295	28.5	2,399	52.8	4,543	100.0
Jan.-Dec. 1974	250	52.7	77	16.2	147	31.0	474	100.0
Jan.-Dec. 1975	1,240	58.2	739	34.7	153	7.2	2,132	100.0
Jan.-Dec. 1976	590	61.3	216	22.5	156	16.2	962	100.0
Jan.-Dec. 1977	1,535	45.9	780	23.4	1,026	30.7	3,341	100.0
Jan.-Dec. 1978	2,347	66.0	955	26.9	252	7.1	3,554	100.0
Jan.-Dec. 1979	3,001	56.3	1,312	24.6	1,018	19.1	5,331	100.0
Jan.-Dec. 1980	1,812	37.8	1,814	37.9	1,163	24.3	4,789	100.0
Jan.-Dec. 1981	2,037	24.4	4,499	53.9	1,814	21.7	8,350	100.0
TOTAL-Jan. 1972-Dec. 1981	15,674	38.1	13,660	33.2	11,775	28.7	41,109	100.0

SOURCE: Montgomery County Planning Board, Research and Special Projects Division.

NOTE: Does not include plats from the incorporated cities of Gaithersburg and Rockville.

CHART 6
BUILDING PERMITS BY STRUCTURE TYPE
MONTGOMERY COUNTY 1972 - 1981

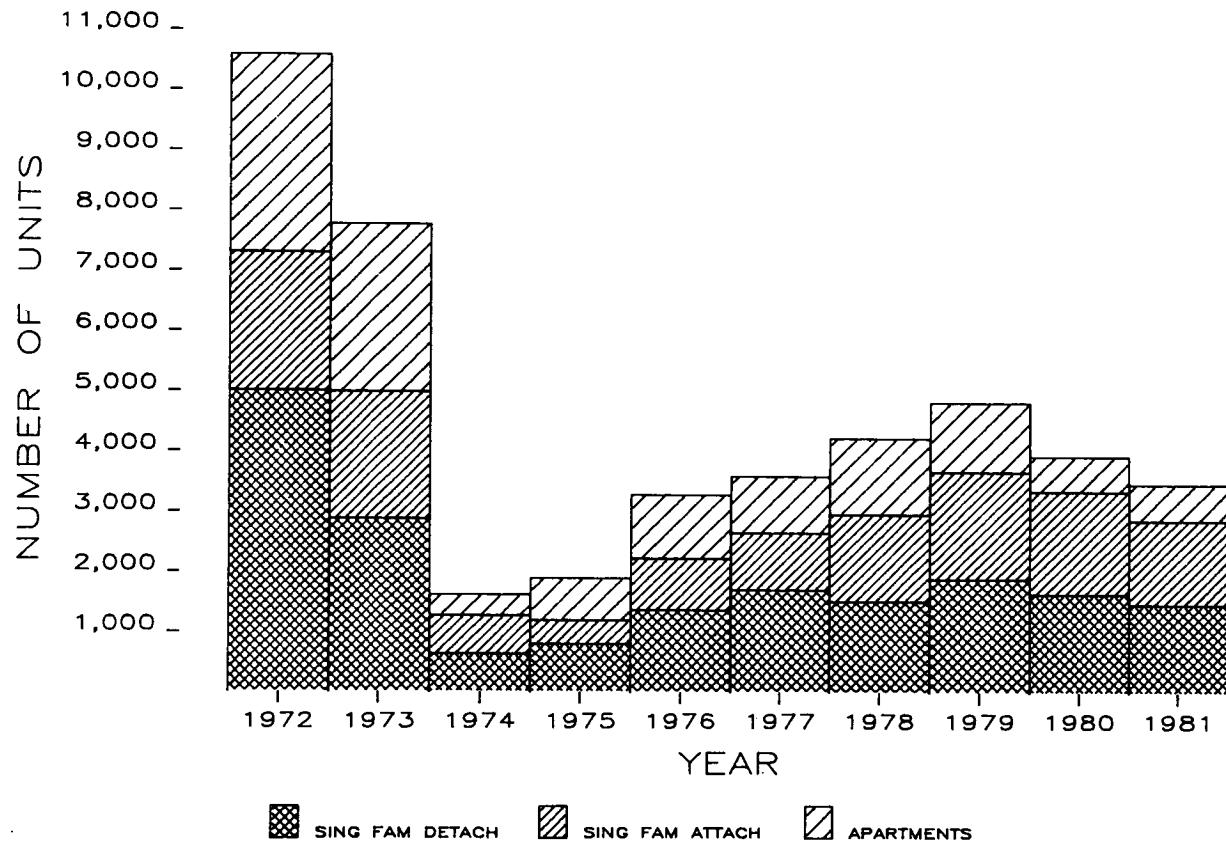


TABLE 15
BUILDING PERMITS, BY STRUCTURE TYPE
MONTGOMERY COUNTY
1972-1981

Period	SF Detached		SF Attached		Apartments		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Jan.-Dec. 1972	5,013	47.3	2,299	21.7	3,293	31.1	10,605	100.0
Jan.-Dec. 1973	2,888	37.1	2,111	27.1	2,792	35.8	7,791	100.0
Jan.-Dec. 1974	639	39.2	641	39.3	349	21.4	1,629	100.0
Jan.-Dec. 1975	806	42.3	393	20.6	705	37.0	1,904	100.0
Jan.-Dec. 1976	1,373	41.6	861	26.1	1,066	32.3	3,300	100.0
Jan.-Dec. 1977	1,713	47.4	953	26.3	950	26.3	3,616	100.0
Jan.-Dec. 1978	1,523	35.8	1,456	34.2	1,276	30.0	4,255	100.0
Jan.-Dec. 1979	1,899	39.1	1,796	37.0	1,162	23.9	4,857	100.0
Jan.-Dec. 1980	1,649	41.6	1,722	43.5	589	14.9	3,960	100.0
Jan.-Dec. 1981	1,480	42.3	1,408	40.3	609	17.4	3,497	100.0
TOTAL - Jan. 1972 - Dec. 1981	18,983	41.8	13,640	30.0	12,791	28.2	45,414	100.0

SOURCE: Montgomery County Planning Board, Research and Special Projects Division, data supplied by Montgomery County Department of Environmental Protection and the incorporated cities of Gaithersburg and Rockville.

CHART 7

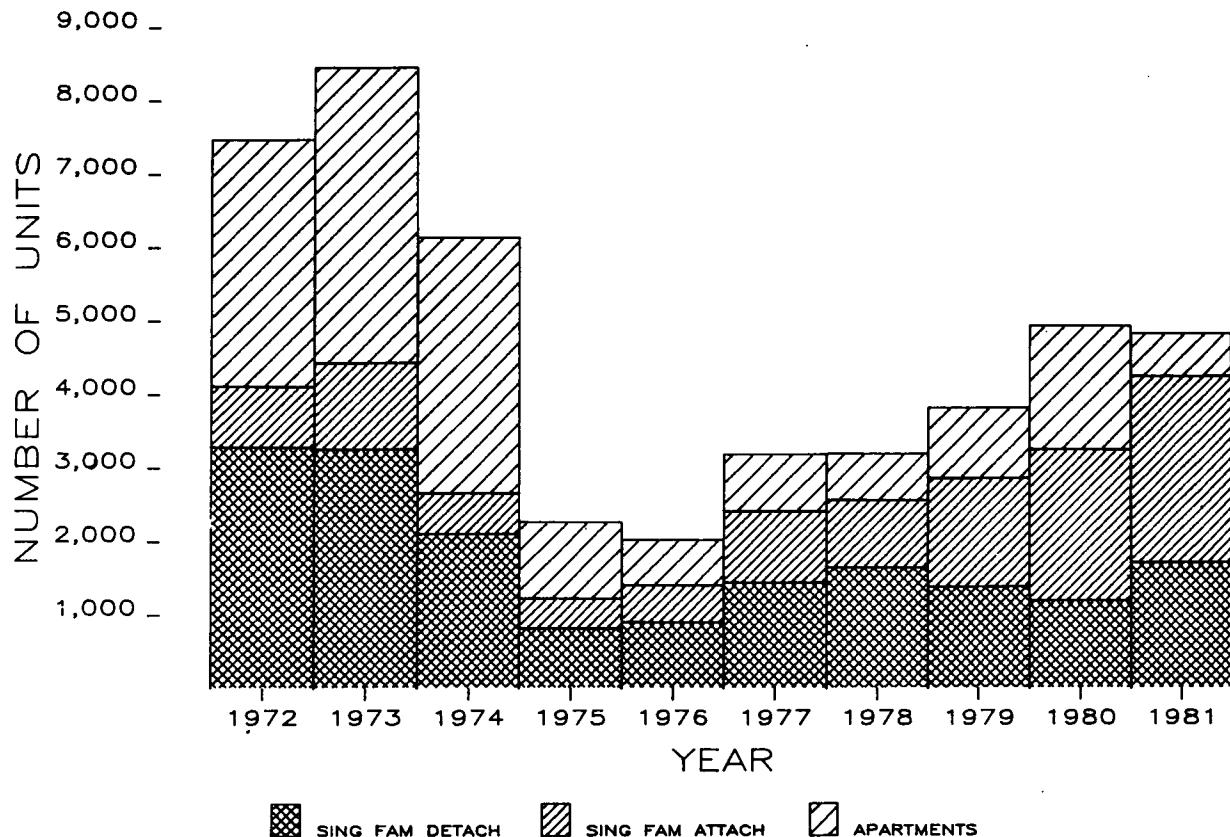
HOUSING COMPLETIONS BY STRUCTURE TYPE
MONTGOMERY COUNTY 1972 - 1981

TABLE 16
HOUSING COMPLETIONS, BY STRUCTURE TYPE
MONTGOMERY COUNTY
1972-1981

Period	SF Detached		SF Attached		Apartments		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Jan.-Dec. 1972	3,289	43.9	830	11.1	3,365	45.0	7,484	100.0
Jan.-Dec. 1973	3,265	38.6	1,179	13.9	4,024	47.5	8,468	100.0
Jan.-Dec. 1974	2,113	34.3	554	9.0	3,489	56.7	6,156	100.0
Jan.-Dec. 1975	822	36.0	411	18.0	1,048	45.9	2,281	100.0
Jan.-Dec. 1976	909	44.5	508	24.9	625	30.6	2,042	100.0
Jan.-Dec. 1977	1,454	45.2	976	30.4	783	24.4	3,213	100.0
Jan.-Dec. 1978	1,664	51.6	920	28.5	640	19.8	3,224	100.0
Jan.-Dec. 1979	1,399	36.3	1,489	38.6	967	25.1	3,855	100.0
Jan.-Dec. 1980	1,207	24.2	2,073	41.6	1,698	34.1	4,978	100.0
Jan.-Dec. 1981	1,733	36.3	2,556	52.4	590	12.1	4,879	100.0
TOTAL-Jan. 1972-Dec. 1981	17,855	38.3	11,496	24.7	17,229	37.0	46,580	100.0

SOURCE: Montgomery County Planning Board, Research and Special Projects Division from records of the Supervisor of Assessments, State of Maryland.

... .Building Permits

Table 15 shows building permits for Montgomery County, 1972-1981. The cost of building permits in the County is significant; builders, therefore, tend to be conservative in obtaining them, i.e., not moving too far ahead of the demonstrated market.

Permits for 1981, as shown in Table 15, represented a 13 percent decline from 1980 activity. The levels of permits for the first six months of 1982 from Table 12 are more than one-half the 1981 total. Allowing for seasonal variation, this may suggest builder expectations that the current year's market might not deteriorate further.

... .Housing Unit Completions

The most sensitive indicator for forecasting purposes is undoubtedly the rate of housing unit completions. For the first six months of 1982, County completions totaled 1,106, of which all were single-family (490 detached and 616 townhouse) units; this is compared to equivalent completions of the preceding year's first five months, 2,023, all of which were also single-family (856 detached and 1,167 townhouse). This constitutes a reduction of 917 units, 45 percent of the five month 1981 total.

The sensitivity of this indicator represents the pragmatic, at-hand builder adjustment to market. Despite permit authorizations, builders are unlikely to build in excessive advance of accomplished sales. Illustratively, although County building permit issuances for the first six months of 1982 are comparatively high, actual completions substantially lagged completions of January-May 1981, suggesting appropriate builder adjustment to firm and prospective sales in a depressed market.

Near-Term Forecast

Consideration of the leading development indicators leads to the belief that the County's total housing production for 1982, as compared to 1981, is likely to decline by approximately one-third, totaling 3,500 units.

The 1983 outlook for Montgomery County housing production is unclear. Selected economic indicators suggest that the nation's economy may now be turning the corner, and that recovery from the current recession is underway, albeit slowly. The Washington, D.C. area recovery, however, may trail the national recovery pace as a result of anticipated continuing reductions in federal employment, and a recovery in homebuilding may lag behind in other sectors of the economy.

The previously described reduction in mortgage interest rates is linked to the greater availability of mortgage lending funds, in turn, caused by the diminished demand for credit among business firms, manufacturers, and consumer households during this period of economic recessing and high unemployment. Paralleling the above has been an increase in personal savings, which augment the credit supply, as householders seek protection from job and income uncertainties. It is expected that the current interest rate reduction trend will continue for the next several months as a result of lagging economic recovery and also from recently revised Federal Reserve Bank monetary strategies, i.e., departure from exclusive dependence upon money supply restraints to control inflation. On the other hand, with anticipated recovery start by at least mid-1983, credit demands from business and consumers will rise; also, Federal borrowings are expected to increase substantially to cope with massive Federal budget deficits. These

combined forces are likely to reverse current interest rate trends, and mortgage interest rates are likely to return to at least their current levels during the third quarter of 1983.

Strong demographic pressures for new household formations will be a factor in SMSA and County housing production, but lagging recovery from the recession and potential tightening of rental vacancy rates as a consequence of falloff in new rental housing production may suppress potential household formation pressures. Vacancy rates are likely to decline most severely in the lower and moderate price rental inventory, most suitable for accommodating new household formations. One consequence of the foregoing is likely to be a more intensive use of the existing housing inventory, to be reflected in more multigenerational households, apartment and house sharing, and housing unit conversions, legal and otherwise.

Our optimistic or high forecast outlook for calendar year 1982 is one of limited housing production. Local homebuilding will decline to approximately 3,500 units. During the latter half of 1983 homebuilding is expected to begin accelerating, with construction reaching a 4,500 unit per year average through the end of the decade. These gains will be predominantly in single-family detached and townhouse sales housing. Condominium construction will probably increase in volume and is likely to be represented in both luxury units built on prime, opportunity sites and by starter units in low-rise structures to serve first time buyers.

TABLE 17

HOUSING UNIT DEMOLITIONS, BY STRUCTURE TYPE
MONTGOMERY COUNTY
1972-1981

Period	SF Detached		Apartments		Total	
	Number	Percent	Number	Percent	Number	Percent
Jan.-Dec. 1972	84	100.0	-	-	84	100.0
Jan.-Dec. 1973	77	63.6	44	36.4	121	100.0
Jan.-Dec. 1974	63	43.1	83	56.8	146	100.0
Jan.-Dec. 1975	48	57.8	35	42.2	83	100.0
Jan.-Dec. 1976	54	100.0	-	-	54	100.0
Jan.-Dec. 1977	23	53.5	20	46.5	43	100.0
Jan.-Dec. 1978	33	100.0	-	-	33	100.0
Jan.-Dec. 1979	22	100.0	-	-	22	100.0
Jan.-Dec. 1980	23	100.0	-	-	23	100.0
Jan.-Dec. 1981	33	100.0	-	-	33	100.0
TOTAL Jan. 1972-Dec. 1981	460	71.7	182	28.3	642	100.0

SOURCE: Montgomery County Planning Board, Research and Special Projects Division, data supplied by the Department of Environmental Protection, Montgomery County.

CHART 8

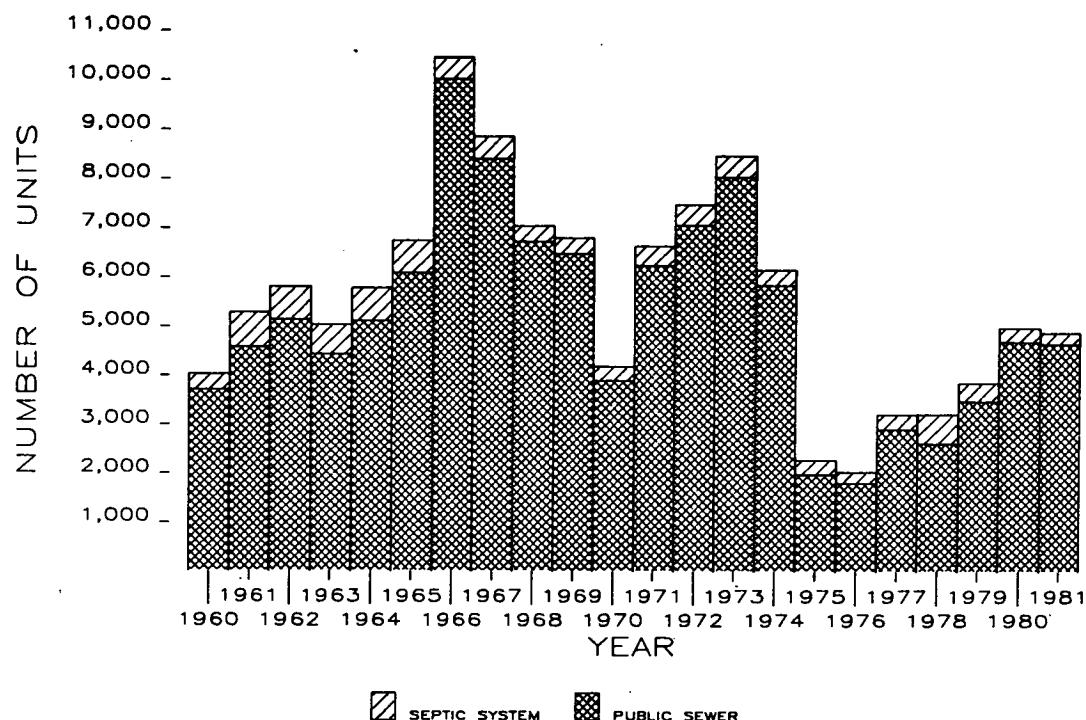
HOUSING UNIT COMPLETIONS ON SEPTIC AND PUBLIC SEWER
MONTGOMERY COUNTY 1960 - 1981

TABLE 18
HOUSING UNIT COMPLETIONS ON SEPTIC AND SEWER SERVICE SYSTEMS
MONTGOMERY COUNTY
1960-1981

Year	Septic System	Sewer Service	Total Units Constructed	% of Total Units Constructed On Septic System
1960	321	3,712	4,033	7.9
1961	708	4,581	5,289	13.4
1962	669	5,144	5,813	11.5
1963	605	4,437	5,042	12.0
1964	672	5,120	5,792	11.6
1965	654	6,097	6,751	9.7
1966	437	10,008	10,445	4.2
1967	456	8,398	8,854	5.1
1968	316	6,730	7,046	4.5
1969	324	6,482	6,806	4.7
1970	262	3,900	4,162	6.3
1971	396	6,244	6,640	5.9
1972	427	7,057	7,484	5.7
1973	439	8,029	8,468	5.2
1974	317	5,839	6,156	5.1
1975	295	1,986	2,281	12.9
1976	229	1,813	2,042	11.2
1977	301	2,912	3,213	9.4
1978	604	2,620	3,224	18.7
1979	370	3,485	3,855	9.6
1980	287	4,691	4,978	5.8
1981	226	4,653	4,879	4.6
TOTAL-1960-81	9,315	113,938	123,253	7.6

SOURCE: Montgomery County Planning Board, Research and Special Projects Division, data supplied by the Department of Environmental Protection, Montgomery County.

TABLE 19

POPULATION AND HOUSEHOLDS
1960-1982
MONTGOMERY COUNTY

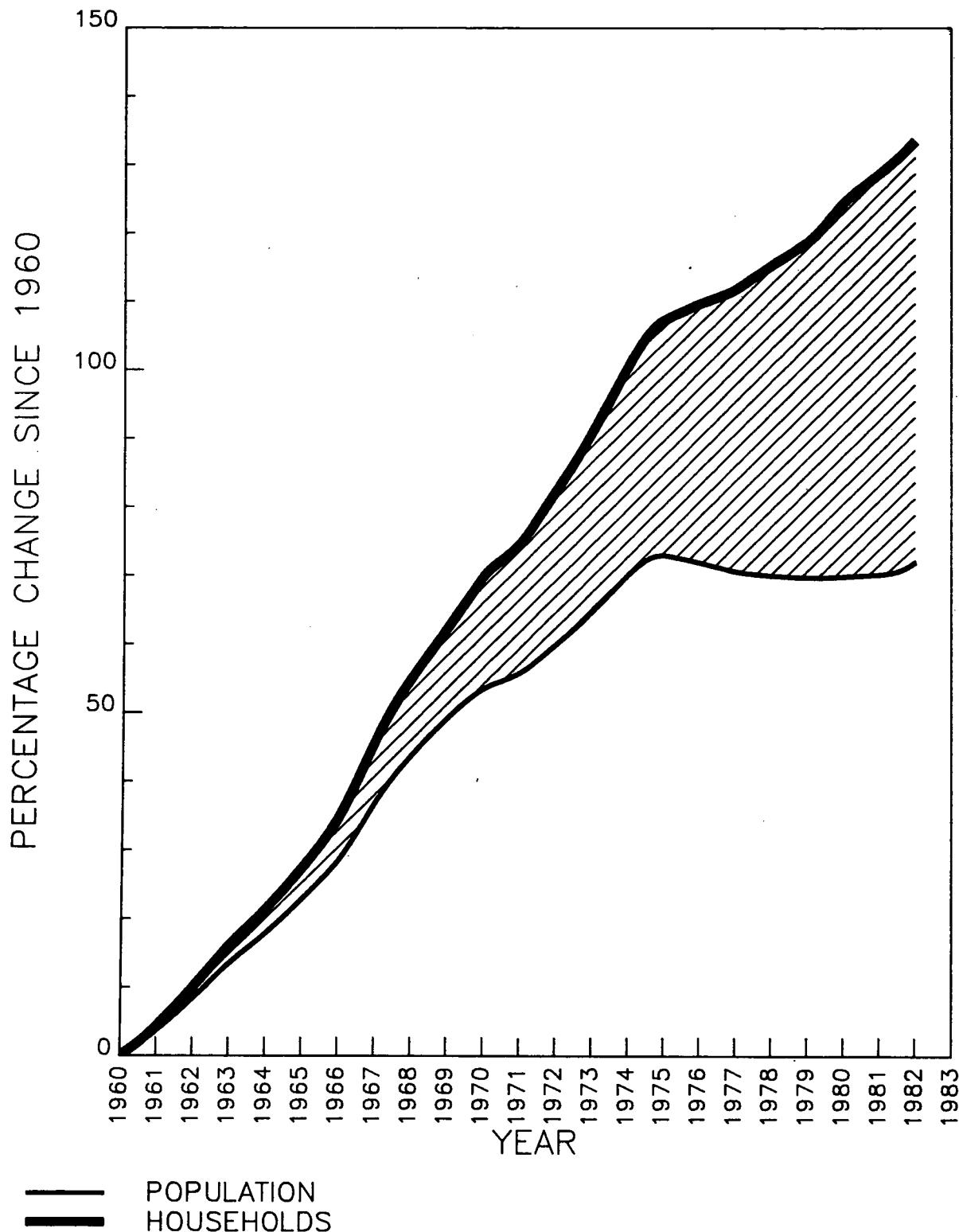
Year	Population	Households*	Change From Previous Year	
			Population	Households
1960	340,928	92,433	-	-
1961	353,400	96,300	12,472	3,867
1962	369,500	101,500	16,100	5,200
1963	386,900	107,100	17,400	5,600
1964	402,000	112,000	15,100	4,900
1965	418,900	117,600	16,900	5,600
1966	438,200	124,200	19,300	6,600
1967	466,300	134,300	28,100	10,100
1968	489,900	142,900	23,600	8,600
1969	508,200	149,700	18,300	6,800
1970	522,809	156,674	14,609	6,974
1971	530,900	161,100	8,091	4,426
1972	544,900	168,100	14,000	7,000
1973	561,100	176,000	16,200	7,900
1974	579,600	185,000	18,500	9,000
1975	589,400	191,400	9,800	6,400
1976	585,800	193,600	-3,600	2,200
1977	581,100	195,600	-4,700	2,000
1978	579,100	198,800	-2,000	3,200
1979	578,300	202,000	-800	3,200
1980	579,053	207,195	753	5,195
1981	582,500	211,200	3,447	4,098**
1982	586,000	215,600	3,500	4,879

* Occupied housing units.

** May through December.

Sources: 1960, 1970 and 1980 are April figures from the U.S. Census of Population and Housing. All other population and household estimates are for January, produced by the Montgomery County Planning Board staff, Research and Special Projects Division.

PERCENTAGE CHANGE
IN POPULATION AND HOUSEHOLDS SINCE 1960
MONTGOMERY COUNTY



Households have increased by more than 130% since 1960 while population has increased by only 72%. The result is a significant decrease in the number of people per household. We estimate that when less than 3,200 dwelling units were constructed in a year, the County's total population decreased. In those years the declining household size in the existing housing stock was not offset by the increased number of new households.

SOURCE: Montgomery County Planning Board, Research and Special Projects Division

STATUS OF NON-RESIDENTIAL DEVELOPMENT IN MONTGOMERY COUNTY

Summary and Conclusions

Montgomery County non-residential construction has been exceptionally strong in the past several years. New first-class office space has been the dominant force in this growth. Cutbacks in the non-defense sectors of the federal government will dampen the demand for future office space. Available County production indicators suggest that 3 million square feet of non-residential space will be completed in 1982 as compared to nearly 4.1 million in 1981. These structures will not be absorbed as rapidly as before, and their presence and bulk will inhibit additional new construction.

Office Construction

Table 20 shows that more than 2.9 million square feet of office space were completed in the County during 1981. The government center in Rockville accounted for over 800,000 square feet of the total. The remaining 2.1 million were distributed in over 40 separate projects. Gaithersburg and vicinity accounted for the largest amount of private office space (840,000), followed by North Bethesda (700,000), and Fairland/White Oak (approximately 500,000).

The total amount of office space is almost double the production of the previous year and this reflects strong investor confidence in the County. Historically, the County has absorbed 800,000 to 900,000 square feet of office space per year; almost 800,000 square feet of space has already been completed in 1982. More than 1 million square feet of office space is currently under construction. On the basis of current marketing expenses, absorption of this space will be protracted.

There are several factors which suggest that the rate of new office construction will be substantially slower in the near future. Large amounts of vacated office space will come into the market as federal employees are withdrawn from leased space and are consolidated in federally owned buildings. Upgrading by firms already located in the County represents some new construction; their relocation will create vacancies in their former buildings. This vacated inventory will have a considerable price advantage over the newly constructed space.

Rising vacancy rates and slow absorption being experienced in the Washington region will discourage additional speculative office development among both developers and builders.

Retail Space

Lake Forest Mall (1.1 million square feet) was the last addition to the County's inventory of regional shopping centers. There are no plans on the horizon for additional regional shopping malls. In 1981, 380,000 square feet were added to the County's retail space. The average size of 22 projects which constituted that total was approximately 17,000 square feet. By way of comparison, a full service supermarket is 50,000 square feet. This suggests that most recent retail development has been essentially small-scale, targeted to convenience shopping needs.

Future growth in the County will be dependent upon new population growth. The demand for major shopper's goods outlets has effectively been answered by the regional malls. The new shopping centers proposed and under construction are principally convenience goods centers in growth areas of the County. Just under 200,000 square feet have been completed in 1982; an almost equal amount is under construction. The largest project under construction is a convenience shopping center at the northeast corner of Briggs Chaney Road and US 29.

Warehouse/Industrial and Other Spaces

This reduced category of space includes very wide use variations. Users may be a hospital, a single-bay warehouse, or a bakery and still fall within this category.

Research and Development firms have increasingly utilized warehouse space for their operations. This is comparatively inexpensive space, and it provides a suitable environment for new and expanding business.

Such warehouse space has also several retailing purposes, and it readily accommodates such users as automobile body and fender repair, auto painting, kitchen remodeling outlets, furniture stores, etc. The market for this type of space still appears to be strong. In 1981, more than 720,000 square feet of warehouse space was added to the County inventory. Within the first six months of 1982, over 570,000 square feet had already come on-line. There are no apparent signs of overbuilding in the market.

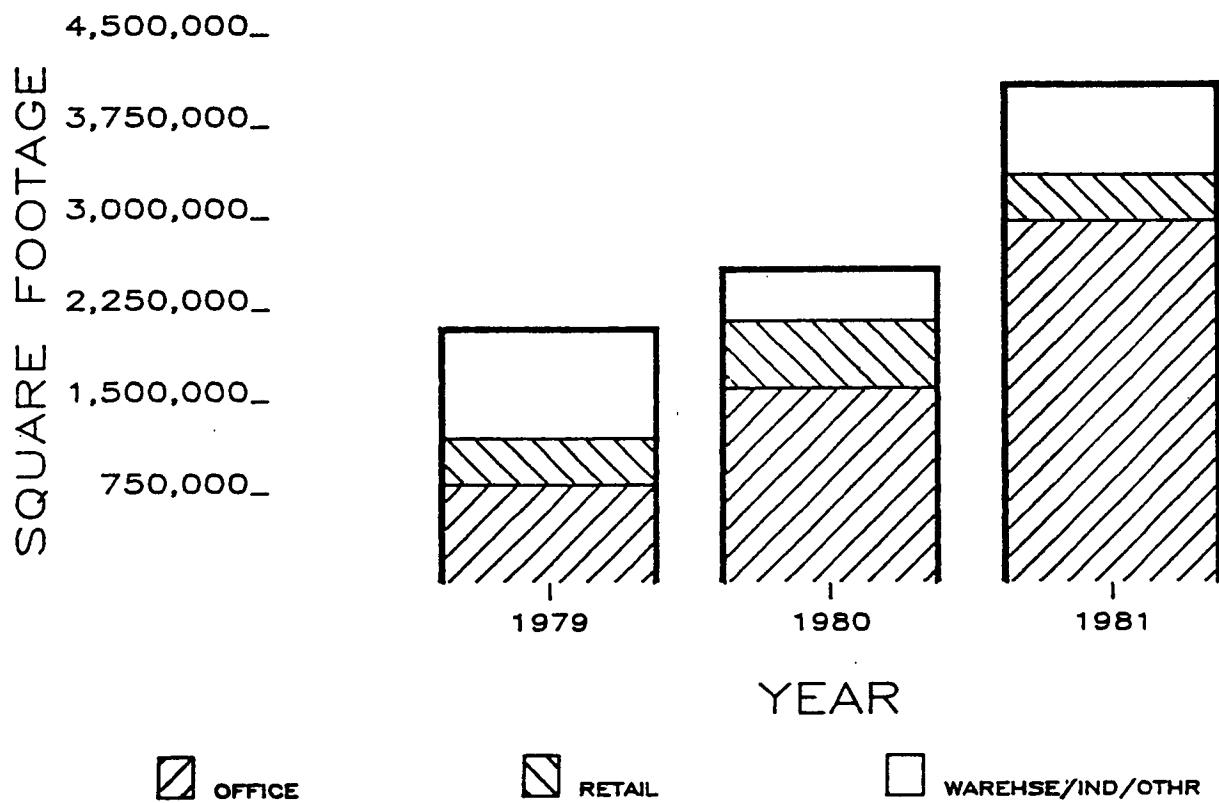
Incubator firms in the high technological field can combine production, storage, and administrative functions under the same roof. The ideal building would have an open interior of one or two floors with about 25,000 square feet per floor, floors that will bear extra weight, heavy duty electrical service, and one or more loading docks.

TABLE 20

MONTGOMERY COUNTY NON-RESIDENTIAL CONSTRUCTION
1979-1981

	<u>Office</u>	<u>Retail</u>	<u>Warehouse/ Industrial/ Other</u>	<u>Total</u>
1979	812,204	378,526	877,854	2,068,584
1980	1,598,158	554,174	404,924	2,557,256
1981	<u>2,965,365</u>	<u>379,961</u>	<u>722,431</u>	<u>4,067,757</u>
Total	5,375,727	1,312,661	2,005,209	8,693,597

Source: Montgomery County Planning Board, Research and Special Projects Division.
Compiled from data provided by the State Department of Assessments and Taxation.

MONTGOMERY COUNTY NON-RESIDENTIAL CONSTRUCTION
1979 - 1981

IV
STAGING

COMPREHENSIVE
PLANNING
POLICIES

GUIDELINES FOR ADMINISTRATION OF THE ADEQUATE PUBLIC FACILITIES ORDINANCE

Introduction

The Montgomery County Subdivision Ordinance authorizes the Planning Board to review all preliminary plans of subdivision for adequacy of programmed public facilities and to reject any that do not conform to this provision of the ordinance.¹ The following guidelines describe the methods and criteria that the Planning Board and its staff will use in administering this activity. These guidelines supersede all previous ones issued by the Board.

The method of administration outlined herein divides the County into policy areas. The Planning Board has determined the maximum amount of development for each policy area which can be accommodated by the existing and programmed public facilities at a particular level of service. These are stated as thresholds. Thresholds are established for dwelling units and employees. As long as a preliminary plan and previously approved development does not exceed the threshold, there is a presumption that public facilities are adequate. However, in order to assure adequate facilities on a small area basis, an additional analysis called Local Area Review may be required. The requirement for this review is triggered by a development which will exceed 50 peak hour trips and which is either near a congested intersection or in a policy area where the total approved development is approaching the threshold. The purpose of Local Area Review is to determine whether the local transportation network is capable of adequately serving the proposed development. These guidelines are not intended to be a means for government to avoid its responsibility for providing Adequate Public Facilities however, alternatives are available for developers who wish to proceed in advance of the public program.

In developing the guidelines outlined herein, the Planning Board has made a preliminary determination that, generally, the existing and programmed facilities, for police stations, fire stations, health clinics, and schools are adequate for the development thresholds outlined below. Similarly, there are no special sewer or water capacity constraints to undercut the service envelopes contained in the current adopted Ten-Year Water and Sewerage Plan. The envelopes have been evaluated and judged consistent with the thresholds outlined below.

In the absence of evidence to indicate a capacity constraint in any of these facilities below the thresholds shown herein, transportation has been found to be the most constraining facility at the present time, and the guidelines have been developed under a methodology that balances development against this constraint. Should other facility elements develop capacity problems, these guidelines will be amended accordingly after proper study, public notice, and public hearings.

Procedures

Within the statutory guidelines for processing preliminary subdivision plans, the following process will be followed. Applications which meet the submission requirements

¹ §50-35K Montgomery County Code.

of the Ordinance will be presented by planning department staff as soon as possible to a meeting of the Subdivision Review Committee. This Committee is composed of staff members representing the various relevant departments and agencies of government. Commentary will be requested from these agencies concerning the preliminary plan application. Planning department staff will incorporate these comments into its own review and prepare a comprehensive staff recommendation. This recommendation will then be placed on the next available regular Planning Board agenda for action by the Board, in accordance with the Board's Rules of Procedure governing subdivision applications.

Criteria

In this document, the County has been divided into a number of policy areas. Each policy area has been assigned a threshold number for both housing and employment, beyond which it is estimated that the capacity of some or all of the available public facilities will have been exceeded. These thresholds are based on a comprehensive evaluation of the combined ability of all the existing and programmed public facilities. In general, these existing and programmed facilities will adequately serve the level of development represented by the threshold numbers. Reflected in these thresholds is an evaluation of the unique characteristics of each policy area with respect to such elements as relative degrees of transit service, through traffic, etc. From time to time, these thresholds will be amended by the Planning Board, after public hearing, to reflect changing conditions such as additions to the Capital Improvements Program, changing patterns of public facility usage, revised levels of public service, etc.

The following map (Map 2, page 93) combines policy areas into groups and indicates acceptable levels of service for each grouping. The policy area group has similar public transit service. A "full service" area has the frequent Metrorail concentrated feeder and community bus, kiss-n-ride and easier walk access. "Frequent" transit service areas have some Metrorail, regional bus, feeder bus, kiss-n-ride, and community bus. An area designated as "moderate" has regional bus and/or commuter rail access as well as limited Metrorail park-n-ride and feeder bus. "Limited" areas have regional bus and/or commuter rail access as well as park-n-ride.

Threshold Interpretation

Planning staff will maintain records of: (1) the total amount of development that actually exists in each policy area expressed in terms of dwelling units and employees; and (2) the amount that would be added to this if all outstanding preliminary plans which have been approved by the Planning Board and which also have received sewer authorization approval from the Washington Suburban Sanitary Commission were also in place. This total will be used as a base, to which during staff evaluation the amount of development that would be generated by each new preliminary plan application will be added. If the combined total does not exceed the threshold of the Comprehensive Staging Policy Guideline, the application will be given a presumption that it meets the adequate public facilities test.

It is recognized that all sewer authorizations will not result in construction. An approved preliminary plan generally obtains a sewer authorization within four months of its initial approval. Historically, 70 percent of approved preliminary plans proceed to record plat. The remaining plans expire and must be resubmitted as preliminary plans if they wish to develop. Sewer authorizations no longer have a constraint on the volume of capacity authorized. The major expenses involved in maintaining an authorization are now

deferred to a point much closer to actual building permit. The life of a sewer authorization is now keyed to the life of a preliminary plan. These factors make it possible to stock pile an authorization far in advance of development. Discounting the list of sewer authorizations is a means of bringing the total amount of development more in line with development which will actually occur within the time frame of adopted Capital Improvements Programs.

Staff will use the following criteria for dwelling units to determine the amount of planned development which can be "discounted." Authorizations which are more than seven years old shall be discounted by 90 percent of their remaining authorization. (This corresponds to the decrease historically experienced when these older record plat apply for a new subdivision.) Authorizations for apartments which exceed the staff's six year forecast will be discounted. (The outlook for apartments is uncertain but the risk of the forecast being exceeded within the six month period at which time the discount will be reviewed is minimal.) Non-apartment authorization will be discounted to the extent to which they exceed 300 units per authorization. (Large developers average 50 units a year per subdivision. During the six year time frame of the CIP, the large developer will build an average of 300 units.)

Staff will use the following criteria to determine non-residential discounts. Sewer authorizations which propose speculative office construction will be identified. With the assistance of the County Office of Economic Development, the staff will isolate from that list those projects which have not taken any steps to proceed through the development process other than sewer authorization, have not obtained financing, and have not risen to the level of notice in published list of anticipated development. Those projects which meet these criteria will be totaled as a discount for each area. The discount will be calculated and will remain constant for six months or until building permits for apartments exceed fifty percent of the six year forecast. The discount procedure and assumptions will be reexamined by the Planning Board, either when warranted by building permits or at the expiration of six months from the date of adoption, which ever is sooner.

The discount comes into use when the threshold has been reached in a policy area. The discount permits planned development to be approved in excess of the threshold up to the amount of the discount. Where the development pipeline already exceeds the threshold by more than the discount, the discount will be of no effect. In order to avoid large developers from being the sole user of discounts, residential plans which are over the threshold will not be permitted to take advantage of the discount for more than 75 dwelling units per parcel of land at one location. (Definition of "parcel of land at one location" will be identical to the definition found in the local area transportation review section for determining the existence of 50 trips.) There is no limitation on the amount of the discount available per plan for employment. Each time the discount is invoked in order to approve a plan, the discount will be lowered by the amount the plan exceeded the threshold.

In cases where the planning staff believes that, notwithstanding the presumption of adequacy given to plans which meet the threshold test, there may be created a serious local public facility overload, staff shall undertake a more detailed local area review. If the result of this review is to demonstrate that this will indeed result in a serious local problem which cannot be resolved within the context of the existing public facility network and the adopted Capital Improvements Program, staff shall recommend denial of the project to the Planning Board. Applicants will be advised if such a local review is

undertaken, and will be required, if necessary, to provide additional analytical background such as traffic studies, to assist staff to complete this analysis within the statutory time frame.

Threshold Flexibility

In some cases it may be in the public interest for the staff to recommend, and/or the Board to grant approval to a preliminary plan application that exceeds the threshold. Caution should be exercised in allowing the threshold to be exceeded. In general, such approval above the threshold will be conditioned upon the future construction, by either the applicant and/or the government, of some public facility projects or the operation of a transit program which, if added to the approved Capital Improvements Program (CIP) as a programmed facility, will result in the subdivision meeting the adequacy tests of local area review. Usually, the nature and design of the additional project or program will need to receive prior approval from the planning staff and from the relevant governmental agency responsible for constructing and maintaining such facilities or programs.

In cases where the applicant agrees to pay for the facility, there will normally be no limit on the size or extent of the project, subject to its being in accordance with an adopted Master Plan or other relevant policy statement. In cases where the approval is conditioned on the government adding some facility projects to the CIP, the Board and staff will be guided by such judgements as: how probable the addition of such projects may be; how large and expensive the projects are; how long they may take to implement; and other similar considerations. In general, this latter type of conditional approval will be limited to situations in which the additional public facility projects are relatively small and easily achieved.

Specific Standards

To better interpret the general provisions described in the Adequate Public Facilities Ordinance itself, the following administrative standards will be observed.

(1) Capital Improvements Program Definition

A public facility project is considered "programmed" and thus counted as an available public facility capacity if it is scheduled for at least 50 percent of its total construction cost to be expended within the six-year period of the adopted CIP. Where such a road project either crosses several policy areas or will be built over a period of time in identifiable segments, the Planning Board may include only those segments which will be completed or started within six years. Staff may request construction schedules from the agency undertaking major projects which meet the above criteria and transmit its findings to the Board.

(2) Roads, Street Access, and Public Transportation

In those policy areas which have not been assigned a specific threshold figure, applications will be reviewed under a transportation standard of not exceeding level of service D at the nearest critical intersection, as per Section 4 of the Local Area Transportation Review Guidelines.

In those policy areas which have been assigned a specific threshold figure, no local area review will be undertaken if the total development, as defined above, does not exceed the threshold, and if the subdivision application generates less than 50 vehicle trips during peak hours. If the application generates more than 50 peak hour trips, it will be evaluated under a separate set of criteria, called Guidelines for Local Area Transportation Review.² The basic procedural elements of these guidelines are shown on Chart 9.

(3) Sewerage and Water Service

In accordance with the language of the Adequate Public Facilities Ordinance itself, in both policy areas with a threshold and those without one, applications will be considered adequately served by sewerage and water if the subdivision is located in an area in which water and sewer service is presently available, under construction, is designated by the County Council for extension of service within the first two years of a current approved Ten Year Water and Sewerage Plan, or, if the applicant either provides a community water and/or sewerage system, or meets health requirements for septic and/or well system, as outlined in the Adequate Public Facilities Ordinance. These requirements are determined either by reference to the Council adopted Ten-Year Water and Sewerage Plan, or by obtaining a satisfactory percolation test from the County Health Department. Applications will only be accepted for further planning staff and Board consideration if they present evidence of meeting the appropriate requirement.

(4) General Health, Safety, and Welfare

If an application does not generate development such as to exceed a threshold, or if it is located in a policy area where no threshold has been designated, planning staff will consider the programmed services to be adequate for facilities such as police stations, firehouses, health clinics, and schools unless there is evidence to believe that a local area problem will be generated. Such a problem is one which cannot be overcome within the context of the adopted Capital Improvements Program and Operating Budgets of the relevant agencies. Where such evidence exists, either through agency response to the Subdivision Review Committee clearinghouse or through public commentary or planning staff consideration, a local area review shall be undertaken. Such review shall seek a written opinion from the relevant agency and will require, if necessary, additional data from the applicant in order to facilitate the completion of the planning staff recommendation within the statutory time frame for Planning Board action.

(5) General Policy Considerations

In cases where the application generates development in excess of the threshold, and the planning staff and/or Board are willing to consider a possible approval conditioned upon some future additions to the Capital Improvements Program, or some additional program to increase capacity, the planning staff may undertake special studies to assist in making such a judgement involving such aspects as fiscal impact, housing price, unique character, etc. In such cases, staff will require, if necessary, additional data from the applicant in order to facilitate the evaluation.

2

See Local Area Transportation Review following this section.

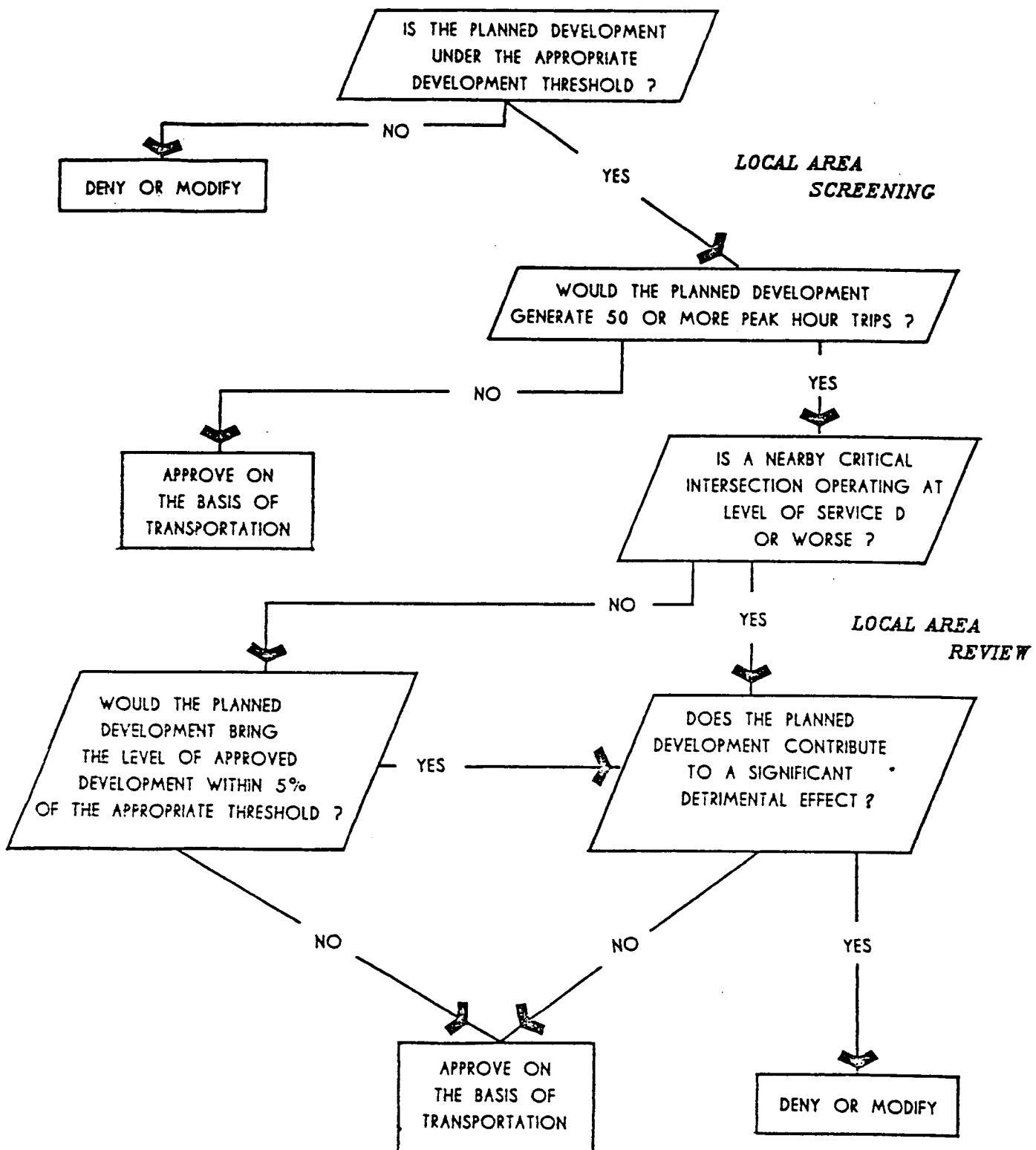
Revision Process

These Administrative Guidelines will remain in effect until amended after public hearing by a formal vote of the Planning Board. It is expected that the next revision to these guidelines will be prepared in the fall of 1983 for public hearing, and adoption by January 1, 1984.

To assist general public understanding of the methodologies and criteria used in this process, the Board will continue to appoint a Citizens Technical Advisory Committee (CTAC). The CTAC will be composed of County citizen representative of a broad spectrum of County interests, together with ex-officio members from appropriate County and State agencies. The committee will be asked to review the staff draft 1983 CPP and other matters related to the administration of the Adequate Public Facilities Ordinance as requested by the Board. The committee will be invited to share its comments and ideas with the Planning Board prior to the Board approving an amended version of this document for general release to the public in the Fall of 1983.

CHART 9

STANDARD APPROVAL PROCEDURE FOR TRANSPORTATION ADEQUACY



SOURCE: Montgomery County Planning Board, Research and Special Projects Division.

DEFINITIONS

POTENTIAL FURTHER TRANSPORTATION IMPROVEMENTS

Facilities which if included as Programmed Facilities have the potential of increasing the development threshold while maintaining an acceptable level of service.

The list of such improvements is not necessarily complete. Alternative improvements or other independent projects, as yet undefined, may also be capable of adding transportation capacity.

LOCAL AREA REVIEW

The process used to determine if the proposed development will produce excessive local detrimental impact beyond the capacity of existing and programmed public facilities. (See detailed guidelines attached.)

PROGRAMMED FACILITY

A capital facility project which is contained within the approved Six Year Capital Improvements Program of an appropriate agency, such that at least half of the funds necessary for construction or operation are scheduled for expenditure within the six-year time frame. Where such road project either crosses several policy areas or will be built over a period of time in identifiable segments, only those sections identified by the Planning Board will be deemed "programmed."

SEWER AUTHORIZATION/PIPELINE

An approval by the Washington Suburban Sanitary Commission to provide sewer service to a proposed development under certain conditions, primarily related to engineering standards and administrative fees. In monitoring those authorizations, planning staff will use the Sanitary Commission's files, with periodic updating. Sewer authorizations are an indication of the development pipeline. "Sewer Authorization Pipeline" refers to sewer authorizations plus completed development since 1977.

STAGING POLICY AREA

A geographic subarea of the county, delineated by the Planning Board, for the purpose of staging analysis and the establishment of threshold capacities as appropriate. (See Map, page).

THRESHOLD

A total amount of development expressed in terms of dwelling units and/or employees that has been determined by the Planning Board to be balanced appropriately, on the basis of an area wide average, with the existing and programmed facilities for the area.

Dwelling units may be single family detached, townhouses, garden apartments, and high rises. Each dwelling unit is counted as one unit.

The number of employees produced by development is estimated on the basis of the floor area and intended use of the planned structures. Unless the development is unique in some manner, statistical averages are used for the four major land use categories: office (200 square feet per employee) retail (400 square feet per employee) industrial (450 square feet per employee), and "other" (500 square feet per employee).

POLICY AREA RELATIONSHIP TO PLANNING AREAS

Olney	Includes the southern portion of the Olney Planning Area, the northern border defined by Brookville Road and Brighton Dam Road. Transfer of Development Rights (TDR) sending areas are located north of the policy area.
Germantown West	Identical to that portion of the Germantown Planning Area which lies west of I-270.
Germantown East	Identical to that portion of the Germantown Planning Area which lies east of I-270.
Cloverly	Identical to the portion of the Eastern Montgomery County Master Plan defined as Cloverly; northern border is defined by Ednor Road and Spencerville Road.
Potomac	Includes all of the Potomac Master Plan area, plus a small suburbanized part of Travilah, south of Glen Mill Road and north of the Potomac Electric Power Company right-of-way.
Fairland/White Oak	Identical to the Fairland/White Oak Planning Areas.
Gaithersburg	Includes all of the Gaithersburg and Gaithersburg Vicinity Planning Areas, plus the area bordered by Muncaster Mill Road, Rock Creek Park and the northern border of Rockville; also includes the area immediately south of Route 28, designated for R-200 zoning in the Potomac Subregional Master Plan.
North Bethesda	Identical to the North Bethesda Planning Area.
Kesington/Wheaton	Includes all of the Kesington and Wheaton Planning Areas, plus that portion of the Kemp Mill/Four Corners Planning Area which lies north of the Beltway (I-495).
Bethesda	Identical to the Bethesda Planning Area.
Silver Spring/Takoma Park	Includes all of the Silver Spring and Takoma Park Planning Areas, plus that portion of the Kemp Mill/Four Corners Planning Areas which lies south of the Beltway (I-495).

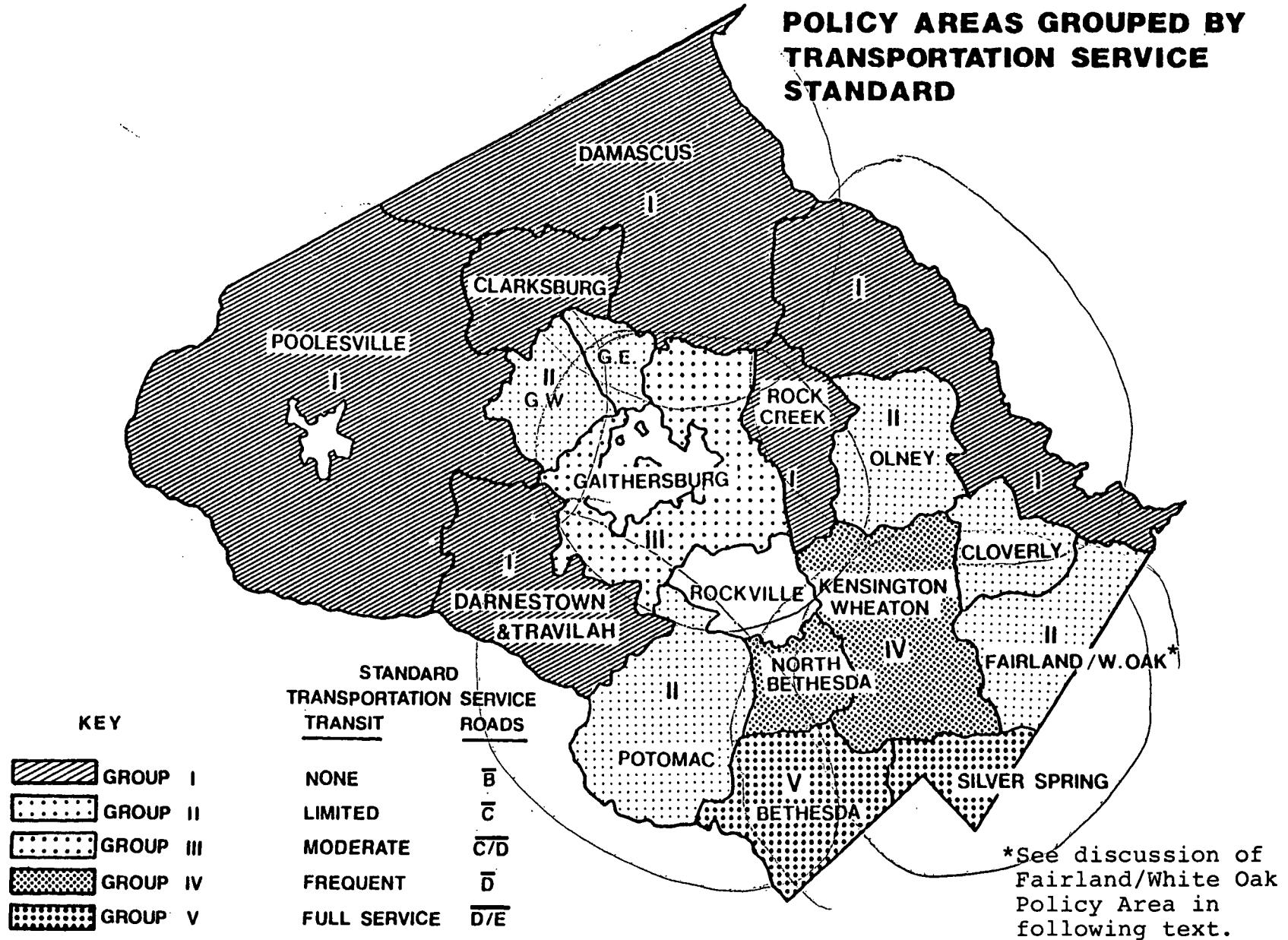


TABLE 21
1983 STAGING THRESHOLDS^{1/}
BASE YEAR 1977

Policy Area and Traffic Sheds	Residential ^{2/} Threshold		Employee ^{2/} Threshold	
	Adopted ^{3/} 1982 Thresholds	Adopted 1983 Thresholds	Adopted ^{3/} 1982 Thresholds	Adopted 1983 Thresholds
<u>GROUP I POLICY AREAS</u>				
Rock Creek	Staging determined by level of service D at nearest intersection or for other policy considera- tions.			
Damascus				
Poolesville				
Patuxent				
Clarksburg				
Travilah/Darnestown				
<u>GROUP II POLICY AREAS</u>				
Olney	4,500	4,500	3,000	3,000
Germantown West	3,000	3,000	1,000	1,000
Germantown East	1,000	1,000	3,500	3,500
Cloverly	500	500	500	500
Potomac	6,300	6,300	3,200	3,200
Fairland/White Oak	8,000	8,500	13,000	14,000
<u>GROUP III POLICY AREAS</u>				
Gaithersburg	16,000	17,500	35,000	37,000
<u>GROUP IV POLICY AREA</u>				
North Bethesda	5,000	7,000	27,000	29,000
Kensington/Wheaton	10,000	10,000	9,000	9,000
<u>GROUP V POLICY AREAS</u>				
Bethesda	5,000 ^{4/}	5,000	19,000 ^{4/}	19,000
Silver Spring/Takoma Park	8,000	8,000	18,000	18,000
<u>COUNTY TOTAL</u>	67,300	71,300	132,200	137,200

- 1/ Thresholds for 1983 are derived from the Capital Improvements Program approved in May 1982, and are expected to remain in force roughly between December 1982 and December 1983.
- 2/ Residential thresholds are measured in terms of numbers of dwelling units. Employee thresholds are measured in terms of number of jobs. Employment estimates are derived from submitted applications by Planning Board staff, based upon the proposed use and square footage of new structures.
- 3/ Allowable number of employees and residential units above the 1977 base period as determined by the adequacy of (1) existing transportation facilities, plus (2) transportation projects which are programmed for 50% of construction in the current Montgomery County CIP and the Maryland Department of Transportation's Consolidated Six Year Transportation Program.
- 4/ The staging elements of the adopted Bethesda CBD Sector Plan are adopted as part of this Comprehensive Staging Policy and are incorporated herein by reference. The limitations of the Bethesda CBD Sector Plan take precedence over the threshold established for the Bethesda Policy Area in this document.

SOURCE: Montgomery County Planning Board, Research and Special Projects Division.

TABLE 22

CURRENT NET REMAINING CAPACITY UNDER 1983 THRESHOLDS
(WITHOUT CONSIDERATION OF DISCOUNT POLICY)

Dwelling Unit Threshold	Residential			Employees			
	(1) Pipeline: Completions Since 1977 Plus Out- standing Sewer Author.	(2) Threshold Minus Pipeline (Column 1 Minus Column 2)	(3) Additional Units Permitted (Positive Values In Column 3)	(4) Employees Threshold	(5) Pipeline: Employees Since 1977 Plus Out- standing Sewer Author	(6) Threshold Minus Pipeline (Column 6 Minus Column 7)	(8) Additional Employees Permitted (Positive Values In Column 8)
GROUP II POLICY AREAS							
Olney	4,500	2,530	1,970	1,970	3,000	2,499	501
Germantown West ^{4/}	3,000	14,031	-11,031	0	1,000	6,850	-5,850
Germantown East	1,000	2,695	-1,695	0	3,500	2,892	608
Cloverly	500	2,360	-1,860	0	500	20	480
Potomac ^{5/}	6,300	3,904	2,396	2,396	3,200	3,200	0
Fairland/White Oak	8,500	9,492	-992	0	14,000	11,126	2,874
							2,874
GROUP III POLICY AREA							
Gaithersburg	17,500	17,426	74	74	37,000	23,755	13,245
GROUP IV POLICY AREAS							
North Bethesda	7,000	3,765	3,235	3,235	29,000	22,517	6,483
Kensington/Wheaton	10,000	6,585	3,415	3,415	9,000	4,229	4,771
							4,771
GROUP V POLICY AREAS							
Bethesda ^{6/}	5,000	2,687	2,313	2,313	19,000	12,695	6,305
Silver Spring/Takoma Park	8,000	1,015	6,985	6,985	18,000	3,635	14,365
							14,365
TOTAL	71,300	66,490	N.A.	20,388	137,200	93,418	N.A.
							49,632

^{1/} Completions through September 1982, sewer authorizations as of January 1983. These numbers are subject to periodic change.^{2/} A positive number indicates existing and proposed developments totaling less than threshold capacity. A negative number indicates threshold capacity has been exceeded.^{3/} Threshold minus pipeline. Any or all of these numbers may be lower because of the effect of local area transportation review. Where Column 3 or 8 is a negative number, additional units permitted is reported as zero.^{4/} Threshold does not include capacity added by developer sponsored road improvements.^{5/} Threshold capacity equal with the zoning envelope.^{6/} The Bethesda CBD Sector Plan supersedes the threshold established for the Bethesda Policy Area.

SOURCE: Montgomery County Planning Board, Research and Special Projects Division.

TABLE 23
EFFECT OF PIPELINE DISCOUNT POLICY^{1/}

	Residential			Employees		
	(1)	(2)	(3)	(4)	(5)	(6)
	Threshold ^{2/} Minus Pipeline	Raw Dwelling Unit Discount	Available ^{3/} Threshold With Discounted Pipeline (Positive Values of Col. 1 Plus Col. 2)	Threshold ^{4/} Minus Pipeline	Raw Employee Discount	Available Threshold With Discounted Pipeline (Positive Values of Col. 4 Plus Col. 5)
<u>GROUP II POLICY AREAS</u>						
Olney	1,970	344	N.A.	501	0	N.A.
Germantown West	-11,031	6,061	0	-5,850	2,540	0
Germantown East	-1,695	1,180	0	608	1,460	2,068
Cloverly	-1,860	561	0	480	0	N.A.
Potomac	2,396	303	N.A.	0	0	0
Fairland/White Oak	-992	3,296	2,304	2,874	820	N.A.
<u>GROUP III POLICY AREA</u>						
Gaithersburg	74	1,540	1,614	13,245	1,450	N.A.
<u>GROUP IV POLICY AREAS</u>						
North Bethesda	3,235	523	N.A.	6,483	4,450	N.A.
Kensington/Wheaton	3,415	1,048	N.A.	9,771	0	N.A.
<u>GROUP V POLICY AREAS</u>						
Bethesda	2,313	167	N.A.	6,305	1,930	N.A.
Silver Spring/Takoma Park	6,985	5	N.A.	14,365	0	N.A.
<u>TOTAL</u>						

^{1/} These APF guidelines prescribe a discounting of sewer authorizations (see page 85). This discount comes into play only where the pipeline exceeds or is about to exceed the threshold and where the amount of the discount (Column 2 and 5) is greater than the aforementioned excesses (Column 1 and 4).

^{2/} A positive number reflects remaining capacity under threshold capacity. A negative number indicates threshold capacity has been exceeded by existing and planned development.

^{3/} Where the threshold minus the pipeline is greater than the raw discount, the discount policy has no practical effect. Where this situation exists an "N.A." (Not Applicable) is reported in this column. Restriction on the use of capacity made available by the discount is contained in these guidelines (see page 85).

SOURCE: Montgomery County Planning Board, Research and Special Projects Division.

TABLE 24

**ROAD PROJECTS ADDED BY THE ADOPTED 1983-88 CIP
AND THE MDOT/SHA CONSOLIDATED TRANSPORTATION PROGRAM**

Policy Area	Roadway	State or County	Limits
<u>Fairland/White Oak</u>	East Randolph Road	C	New Hampshire Avenue to Fairland Road
<u>Gaithersburg</u>	Center Way Road Extension Key West Ave./MD 28	C C/S/D	Snouffers School Road to Strawberry Knoll Road Darnestown Road/Treworth Road, Widen MD 28 at Shady Grove Road between Research Boulevard and I-270
<u>N. Bethesda</u>	East Jefferson Street	C	Montrose Road to Rollins Avenue

READING STAGING CHARTS

Total dwelling units and employees are indicated on vertical axis. The ceiling, threshold and pipeline numbers at the bottom of the charts use 1977 as their base year. Add the ceiling, threshold and pipeline numbers to the 1977 base to obtain the position of the appropriate line on the staging chart.

Net remaining capacity is calculated by subtracting the pipeline from the threshold. Where the pipeline already exceeds the threshold, the net remaining capacity is zero.

The shaded area on the chart represents the range between the high and low forecast.

OLNEY

Existing Conditions

Transit Availability: The Olney area is currently served by regional bus lines on Georgia Avenue, New Hampshire Avenue, and Route 108. Metrobus service is increased incrementally in response to increasing demand. A park-n-ride lot, which is served by Metrobus at Norbeck Road and Georgia Avenue, has recently opened.

Critical Intersections and Roadway Segments: Existing Georgia Avenue, between Norbeck Road and Route 108, is inadequate and unable to handle the future traffic volumes based on the planned development in the Olney area.

Programmed Transportation Improvements

The County FY 83-88 CIP includes two roadway improvement projects: Georgia Avenue improvement between Norbeck Road and Route 108, and an intersection improvement at Georgia Avenue and Emory Lane.

Thresholds and the Relationship to Planned Development

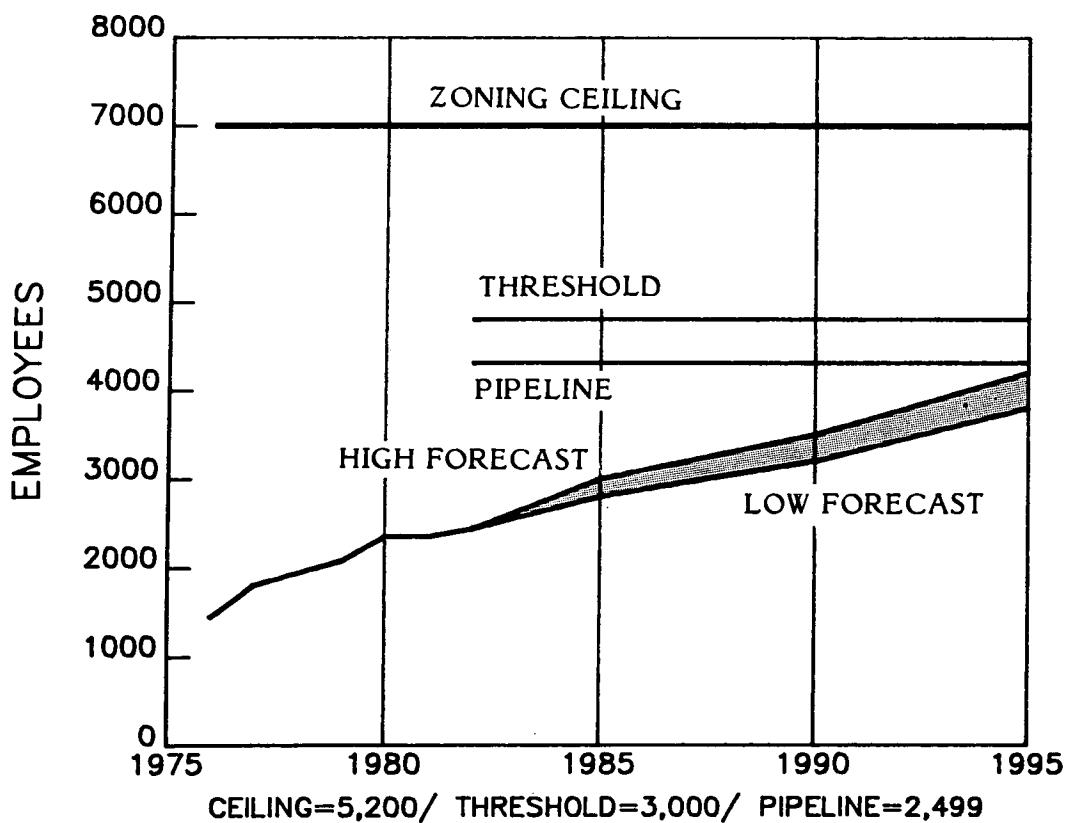
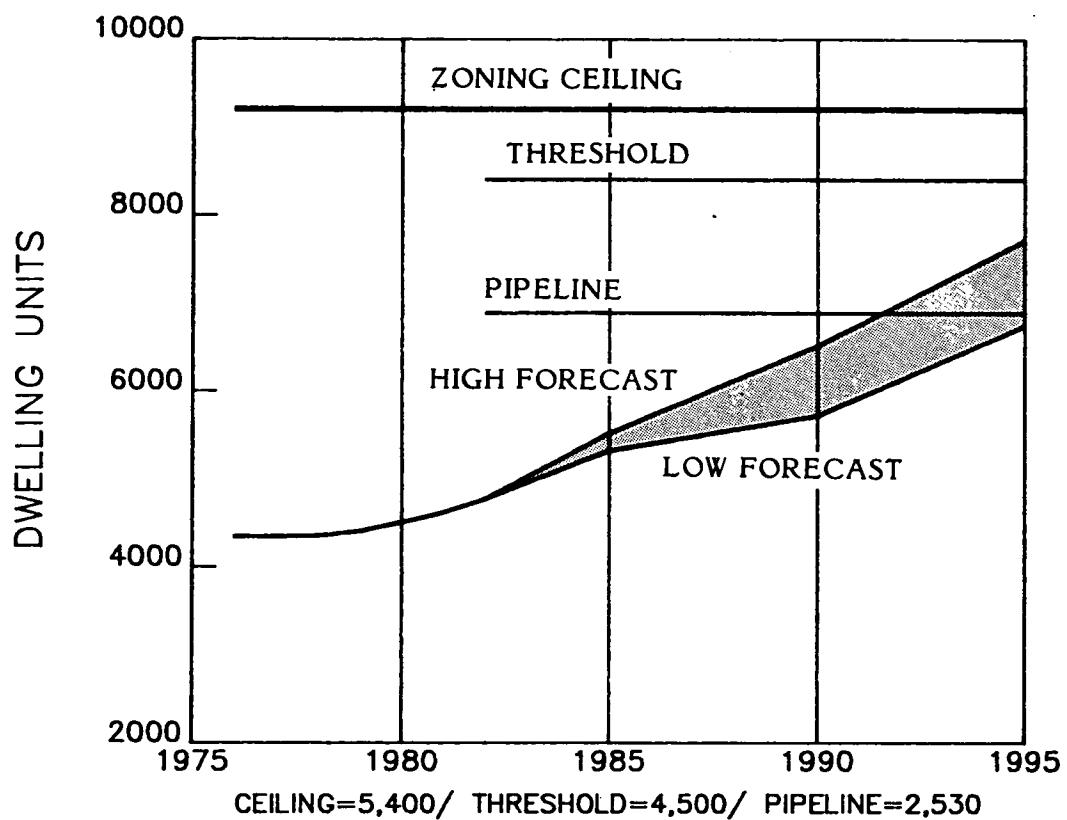
The widening of Georgia Avenue and its intersection improvement included in the current County CIP is of a somewhat lower standard than that envisioned in the Olney Master Plan. As such, a dwelling unit development threshold of 4,500 is recommended, which is less than the Stage II of the Olney Plan. A threshold of 3,000 employees is also recommended.

Considerations for the Future

Areas of Local Congestion: The area feeding into Georgia Avenue at Emory Lane is the only potential local congestion problem currently identified. The intersection of Georgia Avenue and Norbeck Road had been congested for the past several years, but the recent improvements by the SHA now provide an acceptable level of service.

Recommended Transportation Improvements: Several minor intersection improvements along Route 108 and Georgia Avenue are projected in conjunction with planned development subdivisions. The master plan recommends a 4-lane divided road as an improvement for Georgia Avenue from Norbeck Road to the recent intersection improvements in Olney. The MdDOT is proposing the addition of this 4-lane divided road as part of their proposed FY 83-88 Consolidated Transportation Program (CTP). They propose that this project be jointly funded and implemented with MCDOT and would augment the project in the County CIP. From a Countywide perspective, such a project would provide for a welcome but marginal increase in threshold development capacity in the Olney area, which presently seems to have sufficient threshold capacity.

OLNEY POLICY AREA



GERMANTOWN WEST

Existing Conditions

Transit Availability: Since June 1980, MCDOT Ride-On Community Bus has been serving the west part of this area from the Lakeforest Mall in Gaithersburg via Frederick Avenue, Middlebrook Road, and MD 118. Regional bus service should reach this area when Metrorail opens to Shady Grove in mid-1984.

Critical Intersections and Roadway Segments: There will be intersection capacity problems at MD 118 and Aircraft Drive, and MD 118 and Middlebrook Road when developer plans materialize into actual development. Also, MD 118 between Middlebrook Road and Aircraft Drive will have a capacity problem.

Programmed Transportation Improvements

The current County FY 83-88 CIP includes the Great Seneca Highway and a bridge replacement project on Waring Station Road over the B&O Railroad. Also, as a transit-related project, the CIP includes the Germantown Commuter Rail Station project for County participation in improving the rail passenger station at Germantown as part of the MCDOT commuter rail improvement program.

Thresholds and the Relationship to Planned Development

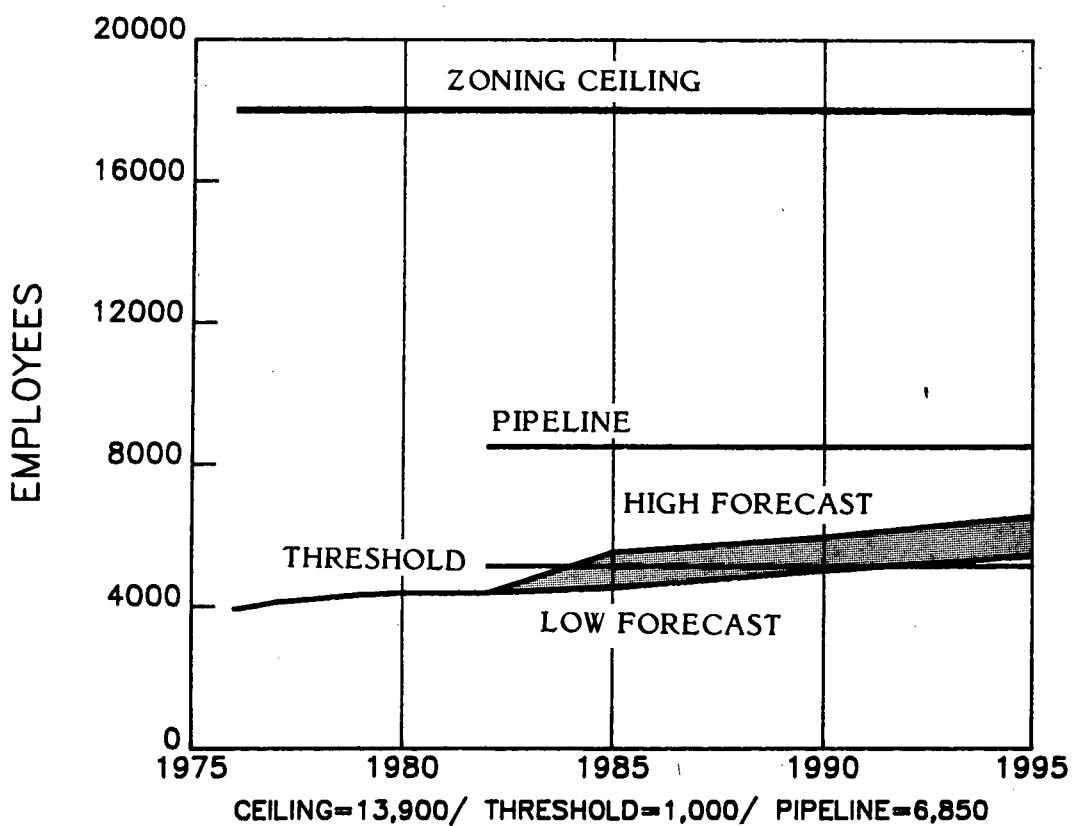
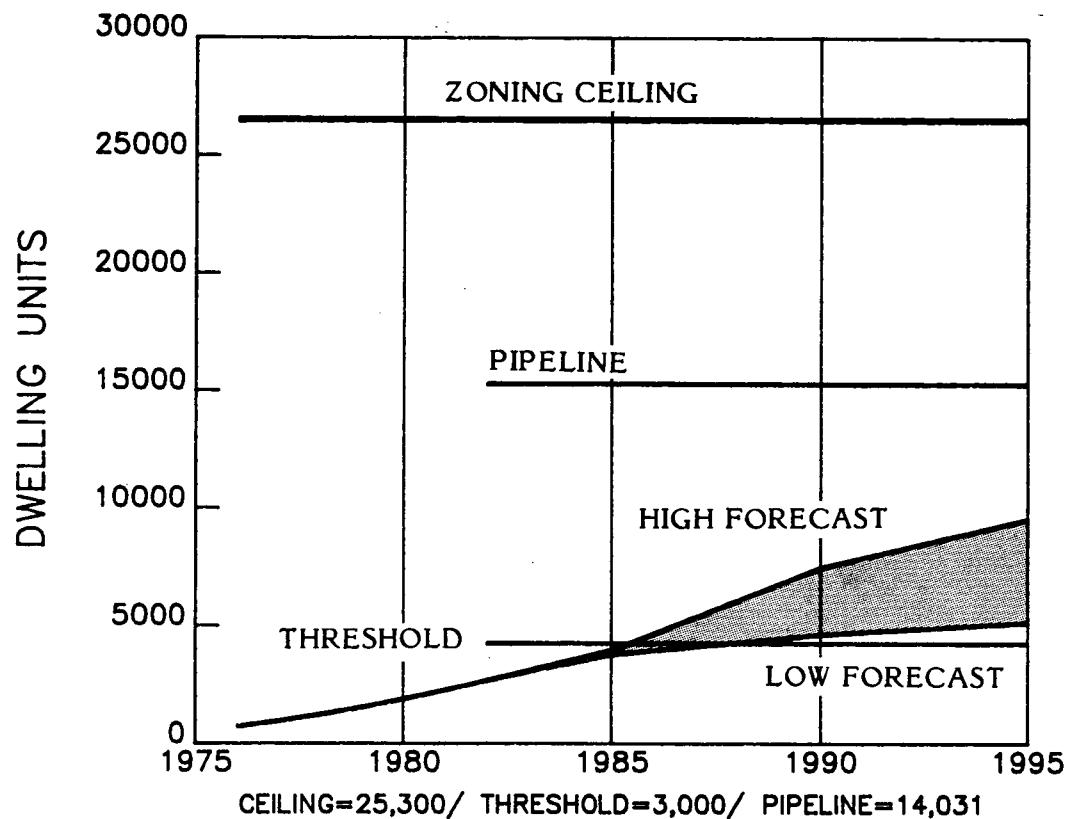
This area has a large number of sewer authorizations for residential as well as non-residential development as a result of substantial subdivision activity for the past several years. The recommended thresholds for this area are 3,000 dwelling units and 1,000 employees. For both residential and employment thresholds, the sum of the completions since 1977 and the current sewer authorizations exceed the thresholds by significant amounts. Consequently, transportation improvements (the MD 118 roadway between Middlebrook Road and Aircraft Drive and intersection improvements) are required as a condition for final APF approval for a number of preliminary subdivision plans. The MD 118 roadway improvement project is currently being developed through private contributions, and the County may participate at a later stage. This roadway improvement has limited capacity, and additional roadway improvements have been identified in reviewing recent subdivision plans establishing a second "club." The second roadway improvements will be made on MD 118 between the I-270 interchange and Wisteria Drive, Middlebrook Road between MD 118 and Great Seneca Highway, and several area intersections. These improvements also have been subscribed to their capacity, and consideration is being given to identifying further improvements. Because these MD 118 and associated improvements are not contained in the current adopted CIP, they will not be counted as adding to the threshold capacity, except for those developers who will contribute to their construction. Details of these road projects and developer contribution will be worked out jointly among the Planning Board staff, County Executive staff and participating developers.

Considerations for the Future

Areas of Local Congestion: In order to avoid potential local congestion, it is anticipated that a portion of MD 118 will be widened to six lanes and have intersection improvements at Aircraft Drive, Crystal Rock Drive, Middlebrook Road, and Clopper Road through private developer contributions and construction.

Recommended Transportation Improvements: Before additional growth can be approved as envisioned by the Germantown Master Plan Amendment, several actions by transportation agencies and private sector developers should be carried out. MCDOT should keep the current schedule for the Great Seneca Highway and should increase the funding in the program so that each potential phase of the entire project is sufficiently funded for construction. The MdDOT should take, as a component from the presently ongoing project planning study for I-270, a separate project to provide for an interchange at Middlebrook Road. This is similar to what was recently done by the MdDOT to provide for the programming of an up-graded interchange at Montgomery Village Avenue and West Diamond Avenue. From a Countywide development perspective, a Middlebrook Road Interchange would be an important project. The MdDOT should also reinstate the MD 118 Project Planning Study with a reduced scope of alternatives covering the area from MD 117 (Clopper Road) to MD 355 (Frederick Avenue). Work should also be initiated, but with a somewhat lesser urgency, on a Project Planning Study of MD 117 (Clopper Road) from Longdraft Road to MD 118 (Germantown Road). In the short-term, new developments in this area would still have the option of proceeding with developer participation clubs to specific roadway projects being programmed for construction.

GERMANTOWN WEST POLICY AREA



GERMANTOWN EAST

Existing Conditions

Transit Availability: Since June 1980, MCDOT Ride-On Community Bus is serving this area from the Lakeforest Mall in Gaithersburg via Frederick Avenue, Middlebrook Road and Route 118. Regional bus service should reach this area when Metrorail opens to Shady Grove in mid-1984.

Critical Intersections and Roadway Segments: There are intersection capacity problems at MD 355 and MD 27, MD 355 and MD 118. Recently MD 355 and Middlebrook Road started to operate at LOS D/E also. Insufficient roadway segment capacity may develop on MD 118 and MD 355 north of MD 118 due to a large number of approved preliminary plans in the immediate area.

Programmed Transportation Improvements

The current County FY 83-88 CIP includes an intersection improvement project at MD 118 and MD 355.

Thresholds and the Relationship to Planned Development

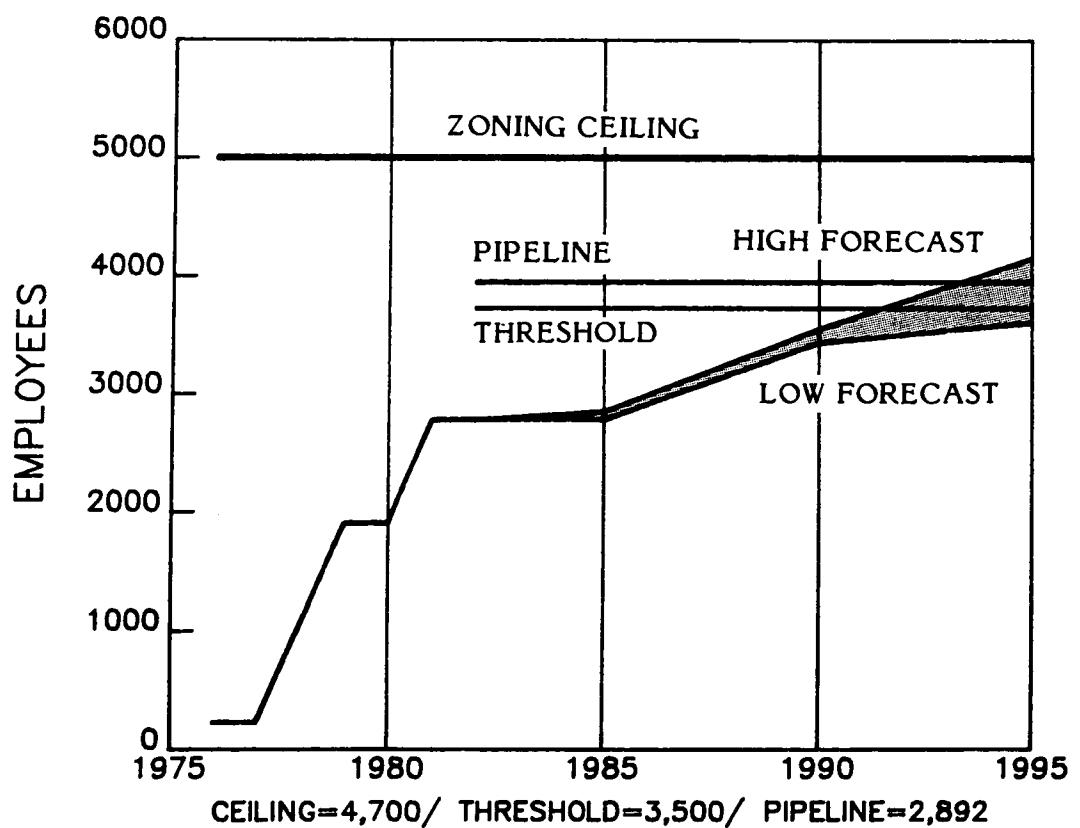
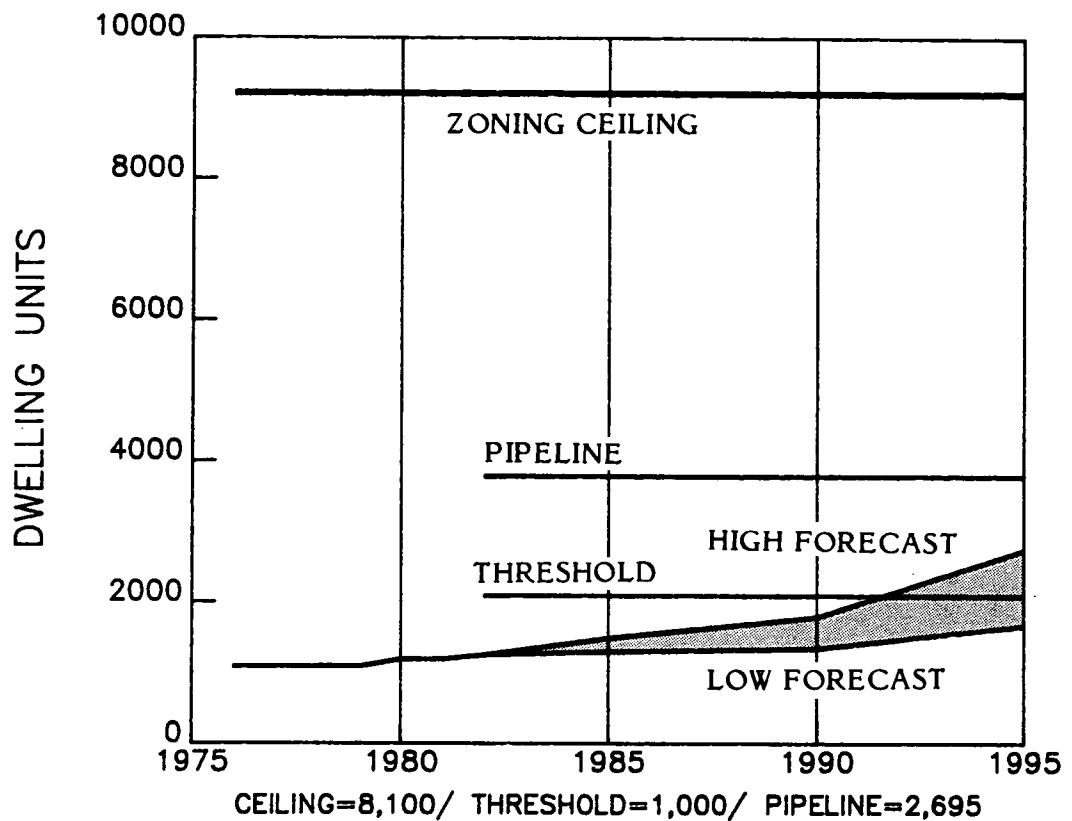
The sum of sewer authorizations and completions since 1977 exceeds the recommended threshold for residential development. Some additional threshold capacity is available for non-residential development. To accommodate a large number of already approved residential preliminary plans and additional non-residential developments, area roadway improvements should be considered.

Considerations for the Future

Areas of Local Congestion: As noted, there are intersection capacity problems at MD 355 and MD 27, and at MD 355 and Middlebrook Road. Improvements to the intersection of MD 355 and Middlebrook Road have been made as conditions of approval for several subdivisions recently approved in the area.

Recommended Transportation Improvements: As new developments on the north side of MD 118 (Germantown Road) are reviewed, improvements to a segment of MD 355 (Frederick Avenue) north of MD 118 may be required to accommodate local growth. Also, it is recommended that the MdDOT reinstate the Project Planning Study for MD 118 with the reduced scope of alternatives. The limits of such a study should be from MD 117 (Clopper Road) to MD 355 (Frederick Avenue) in Germantown East. Such a study may produce a roadway project to serve the large industrially zoned tract of land on the north side of MD 118 east of I-270.

GERMANTOWN EAST POLICY AREA



CLOVERLY

Existing Conditions

Transit Availability: Transit service in the Cloverly area is provided only along New Hampshire Avenue. It is unlikely that additional route service can be supported with the relative low-density development existing throughout most of the area.

Critical Intersections and Roadway Segments: New Hampshire Avenue is two lanes wide north of the Colesville shopping center. New Hampshire Avenue had an average annual weekday traffic volume of 21,400 vehicles in 1980 and Level of Service E is occurring at Good Hope Road and Notley Road. Low levels of service are also occurring at East Randolph Road.

Programmed Transportation Improvements

The Capital Improvements Program includes improvements to the intersections of New Hampshire Avenue at Notley Road and Good Hope Road. The reconstruction and relocation of the New Hampshire Avenue/Bonifant Road/Good Hope Road intersections remain as active projects in the CIP. A project was added this year to the CIP for construction which would widen Randolph Road from New Hampshire Avenue to Fairland Road in the adjacent White Oak Policy Area.

Thresholds and the Relationship to Planned Development

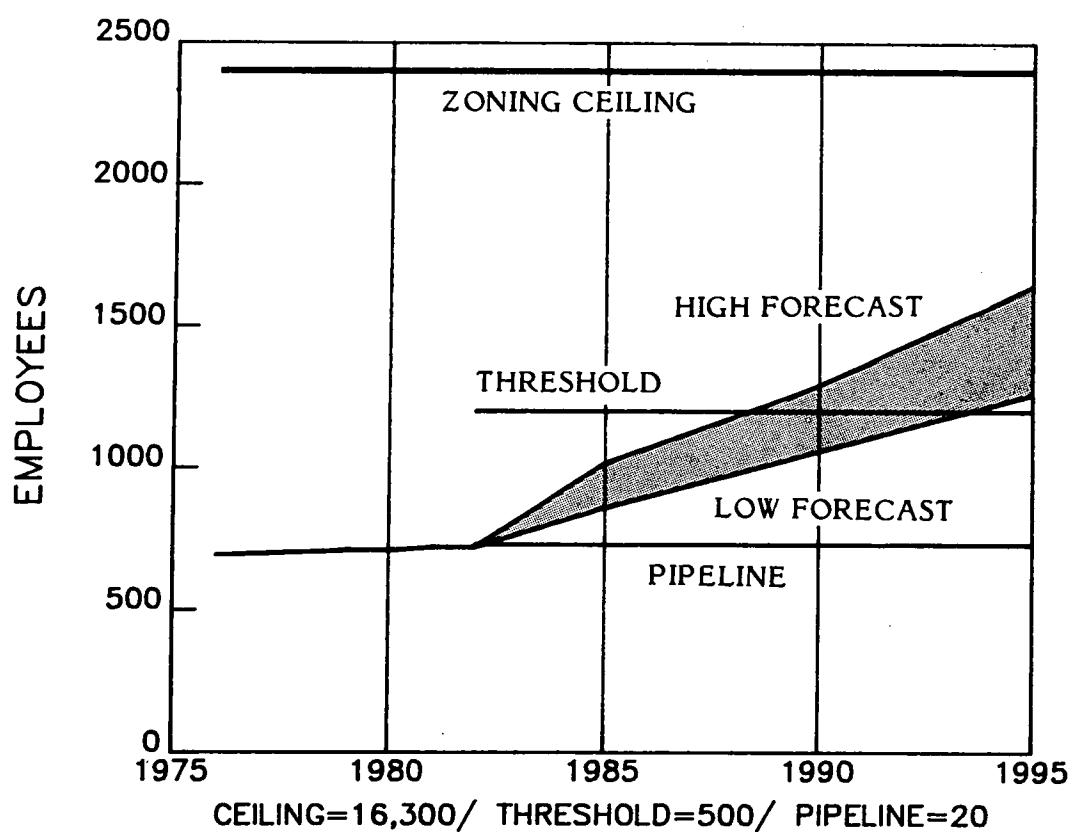
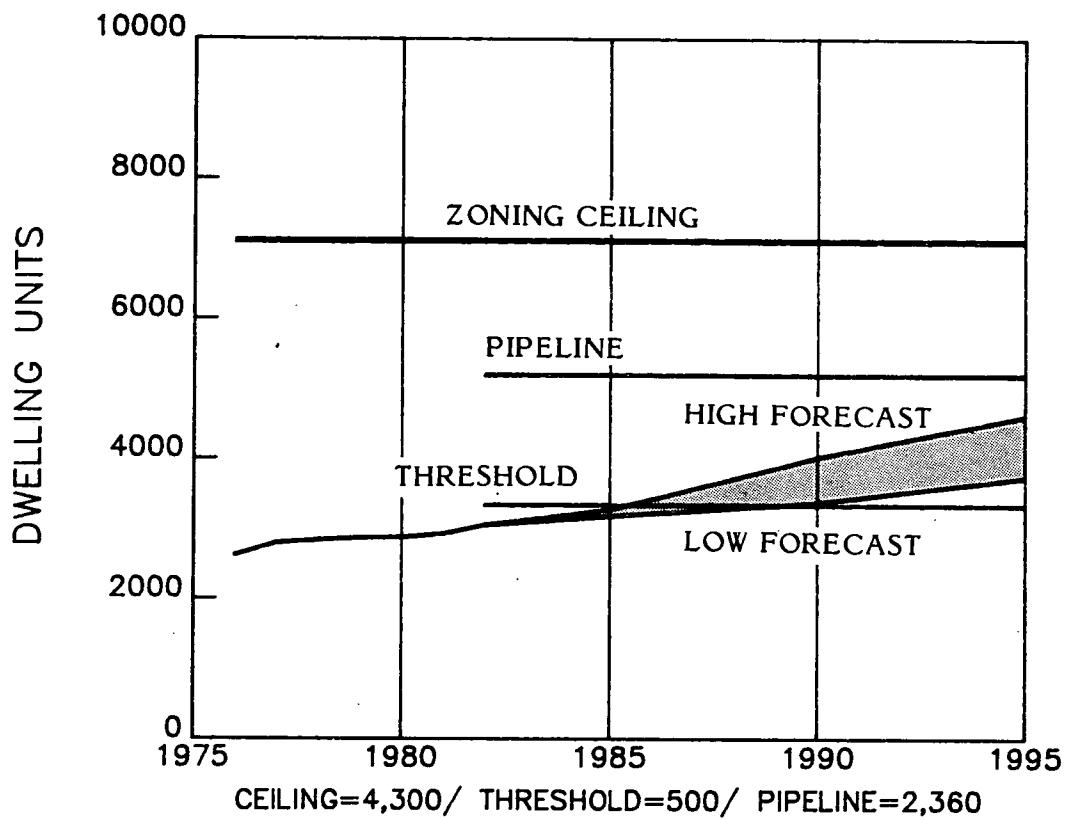
The residential threshold has been exceeded. However, limited employment threshold capacity still remains. The reconstruction of New Hampshire Avenue to four travel lanes north of Randolph Road will create the potential for the approval of additional dwelling units in the Cloverly area.

Considerations for the Future

Areas of Local Congestion: As has been discussed, the area of local congestion includes New Hampshire Avenue from East Randolph Road to Bonifant Road.

Recommended Transportation Improvements: To reduce congestion and allow additional development to take place in the Cloverly area, New Hampshire Avenue north of Randolph Road will have to be widened to four lanes, at a minimum from Randolph Road to Notley Road and more effectively north to Bonifant Road Relocated. The MdDOT should initiate a Project Planning Study for such a widening. Given the limited possible alternatives that could be considered, the study would not be complex. In addition, the MdDOT and/or MCDOT could provide commuter parking fringe lots convenient to New Hampshire Avenue bus service, possibly using excess space in existing private and church parking lots.

CLOVERLY POLICY AREA



POTOMAC

Existing Conditions

Transit Availability: Potomac is currently served by the regional bus system on parts of Seven Locks Road, Falls Road, River Road, and Bradley Boulevard. The services will be improved before 1985. In addition, fringe parking is available at Montgomery Mall.

Critical Intersections and Roadway Segments: The most severe congestion in the Potomac area occurs along Seven Locks Road along most of its length north of River Road. Some of the congestion will be decreased due to projects in the CIP.

Programmed Transportation Improvements

Projects in the CIP for this area include: (1) Montrose Road Extended, (2) Democracy Boulevard Extended, and (3) the bridging of Fernwood Road over I-270. The first two are fully programmed for construction during the time frame of the current CIP; the Fernwood Road bridge is not.

Thresholds and the Relationship to Planned Development

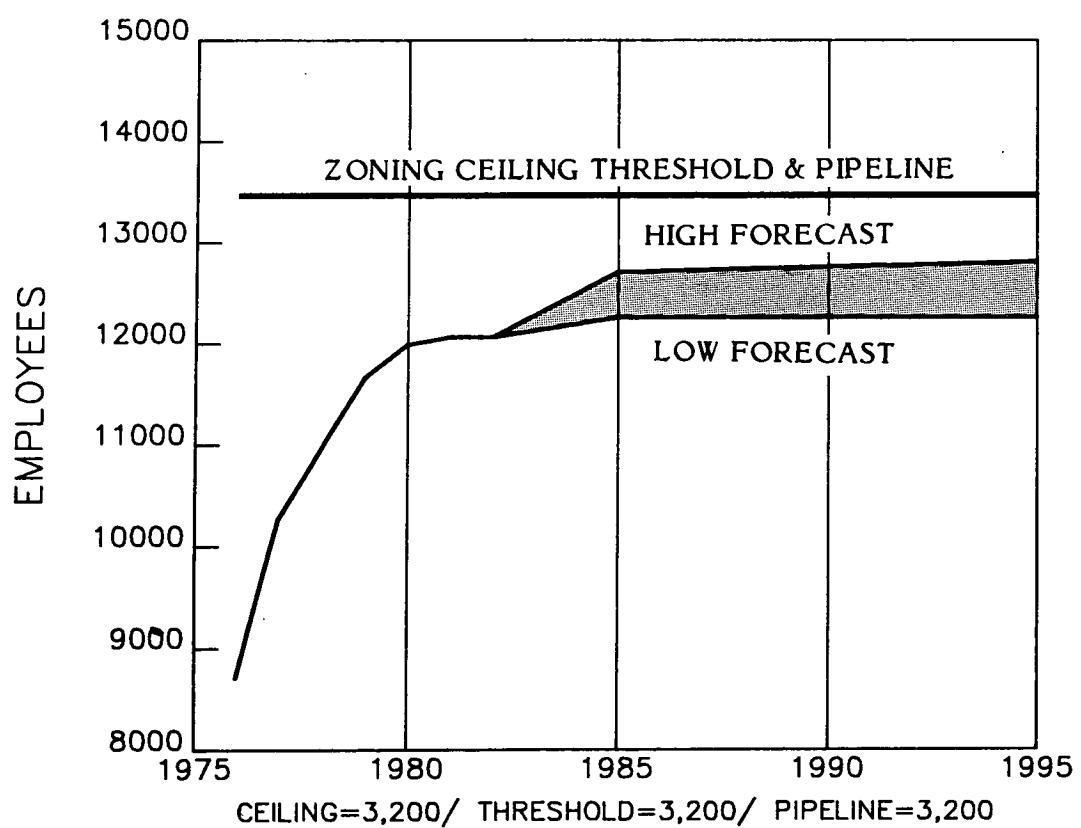
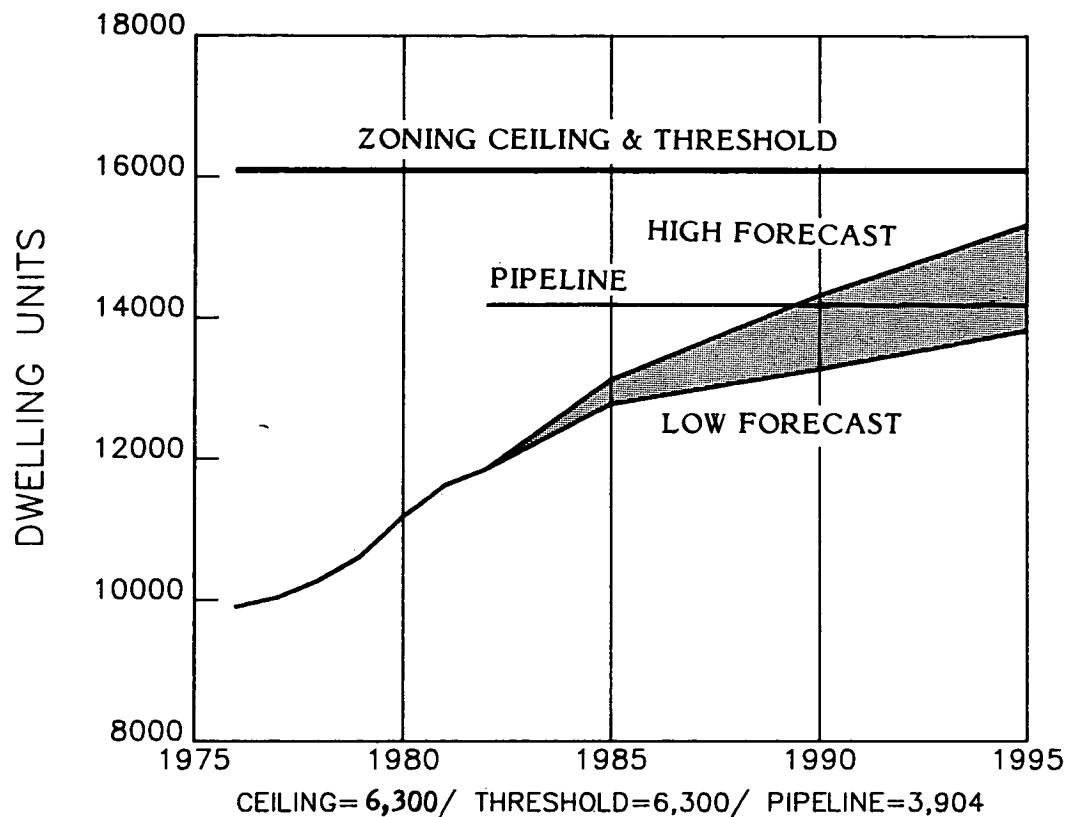
The Master Plan for the Potomac Subregion, adopted in 1980, specified retaining 2-lane cross-sections for most roads, even though congestion will occur. It further specified that when the extensions of Democracy Boulevard and Montrose Road are at least 50 percent programmed for construction, the remaining vacant land in the area can develop to the extent allowed by the then-proposed zoning. This will result in thresholds of approximately 6,300 dwelling units and 3,200 employees. The plan notes that the full zoning development will result in traffic congestion in excess of standards for a Group II policy area.

Considerations for the Future

Areas of Local Congestion: In the "Potomac Policy Area" part of the Potomac Subregion Master Plan, local area congestion reviews will not be required. This is in accordance with the master plan which indicates that since the area is in effect a cul-de-sac with little through traffic, the Board will pursue a policy of maintaining 2-lane roads, with two exceptions. The Board recognized that this will produce levels of traffic congestion during peak periods greater than that considered acceptable in other areas of the County, but feels that this is a legitimate trade-off in order to maintain the character of the area.

Recommended Transportation Improvements: The Potomac Master Plan recognizes that widening Seven Locks Road to four lanes from Tuckerman Lane to Montrose is a potential future improvement. The State Highway Administration is proceeding with designs for an interchange between Falls Road and I-270, which is nearby in the Rockville Policy Area. They are recommending the addition of that project to the proposed FY 83-88 CTP. The MdDOT has also initiated a project planning study to consider the widening of I-270.

POTOMAC POLICY AREA



FAIRLAND/WHITE OAK

Existing Conditions

Transit Availability: The area is currently served by regional bus service along US 29, New Hampshire Avenue, and across Randolph Road; new service has been recently implemented on Old Columbia Pike. MCDOT Ride-On Community bus service also has been initiated in the West Hillandale area.

Critical Intersections and Roadway Segments: There are several critical roadway segments and intersections in the Fairland/White Oak area. Columbia Pike (US 29) is experiencing low peak-hour levels of service at Randolph Road, Industrial Parkway, and Stewart Lane. New Hampshire Avenue, in the vicinity of Hillandale, at Lockwood Drive, and at Randolph Road is also heavily congested because of high traffic volumes.

Programmed Transportation Improvements

The pace at which developers are submitting preliminary subdivision plans for approval, and existing conditions along Columbia Pike and New Hampshire Avenue indicate the need for additional road capacity. Some projects are already included in the Capital Improvements Program. Developer participation projects include intersection improvements to New Hampshire Avenue at Lockwood Drive, the addition of two 12-foot traffic lanes on US 29 between Musgrove Road and Fairland Road, and intersection improvements at Briggs Chaney Road and Route 29, as well as development of a fringe parking lot and a private shuttle bus system to connect development with the Silver Spring Metro Station.

Thresholds and the Relationship to Planned Development

Preliminary plans for additional dwelling units and 2,874 additional jobs are permitted, given the currently programmed improvements, recent development, and sewer authorizations. These thresholds have been selected after careful consideration of their relationship to the traffic capacity of US 29. This road is a heavily used primary state highway with a high proportion of its traffic volume originating from, and destined for, areas outside of Montgomery County, especially Howard County. The traffic impact of the total amount of new development permitted under the Eastern Montgomery County Master Plan is relatively less than the potential impact of the total amount of new development possible in Howard County, since Howard County controls its own planning and zoning. However, new development in Howard County has other alternative road routes in this general corridor, such as I-95, US 1, or the Baltimore-Washington Expressway. Also, the destination of traffic from new development in Howard County, which geographically links to Baltimore as well as Washington D.C., has a higher probability of being dispersed in other directions. The traffic from new development in eastern Montgomery County will tend to interact predominantly with the rest of the Washington metropolitan area.

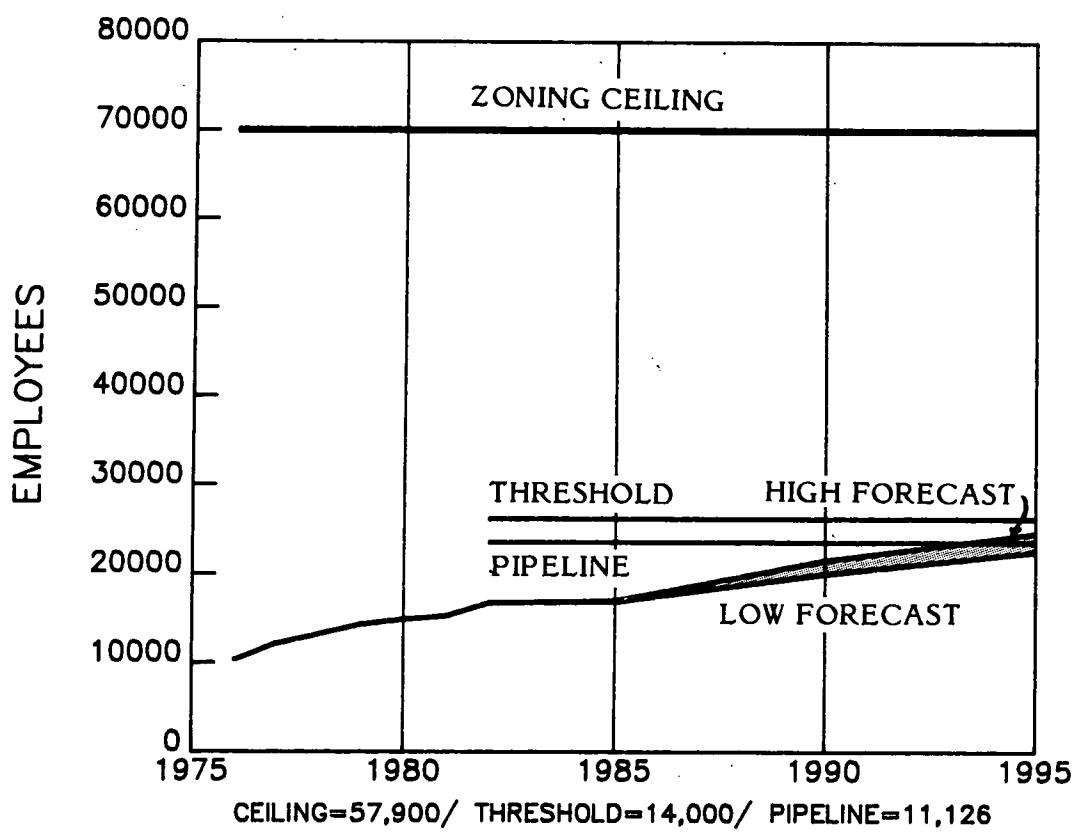
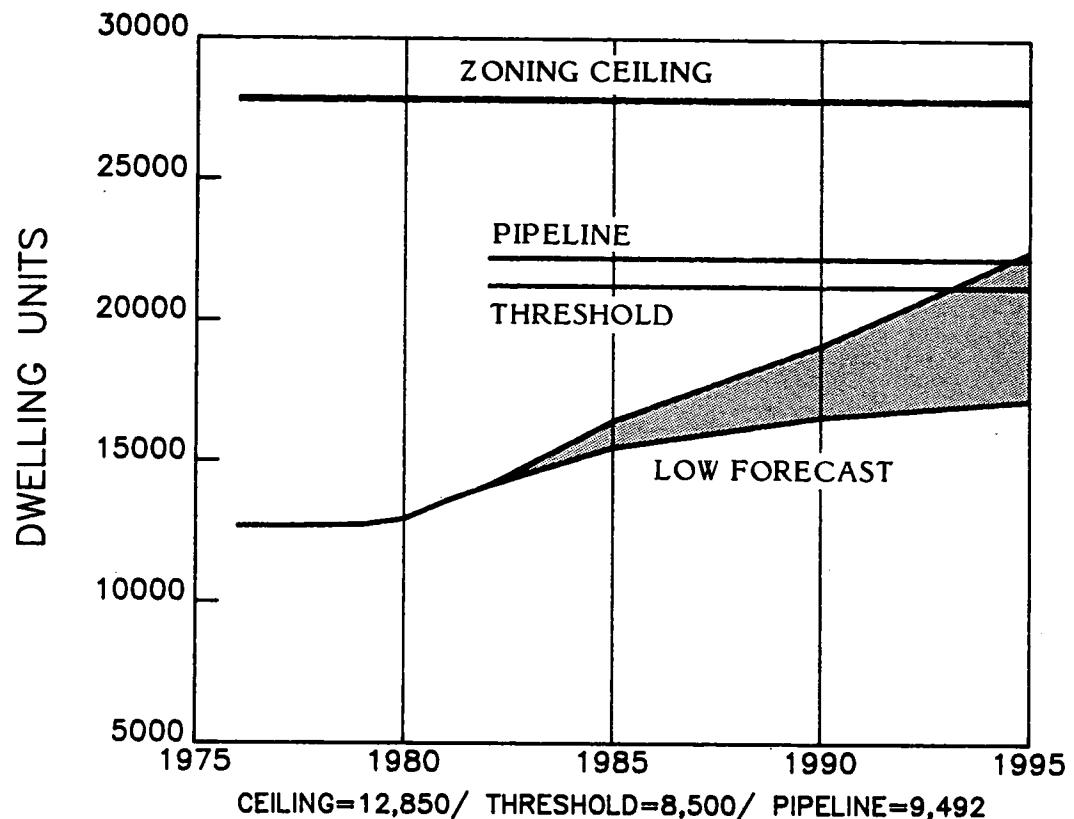
For these reasons, it seems proper to set a level of service standards for this policy area that permits the development anticipated by the Eastern Montgomery Master Plan, so long as it does not excessively jeopardize the functioning of US 29 as a major transportation artery. The D/E level, which was used in establishing this threshold, is higher than desirable for the current level of transit service but it is acceptable because of three factors: 1) the through traffic built-up from Howard County may never actually reach this level, as noted above, 2) the master plan anticipates and encourages additional transit service along Route 29, and 3) excess congestion can be monitored through the local area review process.

Considerations for the Future

Areas of Local Congestion: As traffic continues to build up on US 29 due to growth outside the County, the area south of New Hampshire Avenue will potentially experience increased congestion, which will be monitored and controlled as noted.

Recommended Transportation Improvements: The significant amount of subdivision activity that has been occurring in this area over the past year, and the transportation conditions being required of them, indicate a strong need for the programming of additional improvements. The MdDOT should program some special projects for intersection improvements and/or lane widenings along US 29 (Columbia Pike). This corridor should also be the first priority in the County for the next Project Planning Study by MdDOT. That study should examine the entire need from just south of MD 650 (New Hampshire Avenue) to MD 198 (Sandy Spring Road). Consideration should also be given to the possible reopening of the Old Columbia Pike Bridge over Northwest Branch to motorized traffic and to the implementation of Commuter Fringe Parking Lots. In the absence of State funding in the short-term, the MCDOT should give high priority to programming additional improvements by the County. The MCDOT should also program further intersection improvements at Lockwood Drive and MD 650 (New Hampshire Avenue) to serve additional subdivisions in that local area. Improvements to realign and relocate segments of Briggs Chaney Road should be programmed as recommended in the Eastern Montgomery County Master Plan.

FAIRLAND/WHITE OAK POLICY AREA



GAITHERSBURG

Existing Conditions

Transit Availability: Gaithersburg is currently served by private commuter bus, commuter rail, and a MCDOT Ride-On bus system. No service is currently provided by Metrobus. Metrorail service is scheduled to be in operation to Shady Grove in mid-1984. At that time there will be Metrobus feeder bus service and an expansion of the Ride-On System.

Critical Intersections and Roadway Segments: There are several intersections in the Gaithersburg area operating at or approaching Level of Service E. Such conditions can be found along MD 355, Shady Grove Road, MD 28 and the intersection at MDs 115 and 124. In addition, there are several roadway segments with existing inadequate capacity, such as parts of MD 28 and MD 355.

The MdDOT recently completed the widening of MD 355 between Shady Grove Road and Summit Avenue.

Existing conditions in several instances are worse today than they will be in the future. The programmed transportation improvement will alleviate some existing congestion in addition to providing capacity for the amount of development in the threshold.

Programmed Transportation Improvements

The Gaithersburg area has the largest number of programmed transportation improvement projects of any of the areas in the County, with nearly twenty projects. The most recent CIP and State Consolidated Transportation Program include three new projects: (1) a set of improvements to Key West Avenue and existing MD 28, (2) an extension of Centerway Road from Snouffers School Road to Strawberry Knoll Road, and (3) a widening of Clopper Road from Longdraft to Quince Orchard Road.

Thresholds and the Relationship to Planned Development

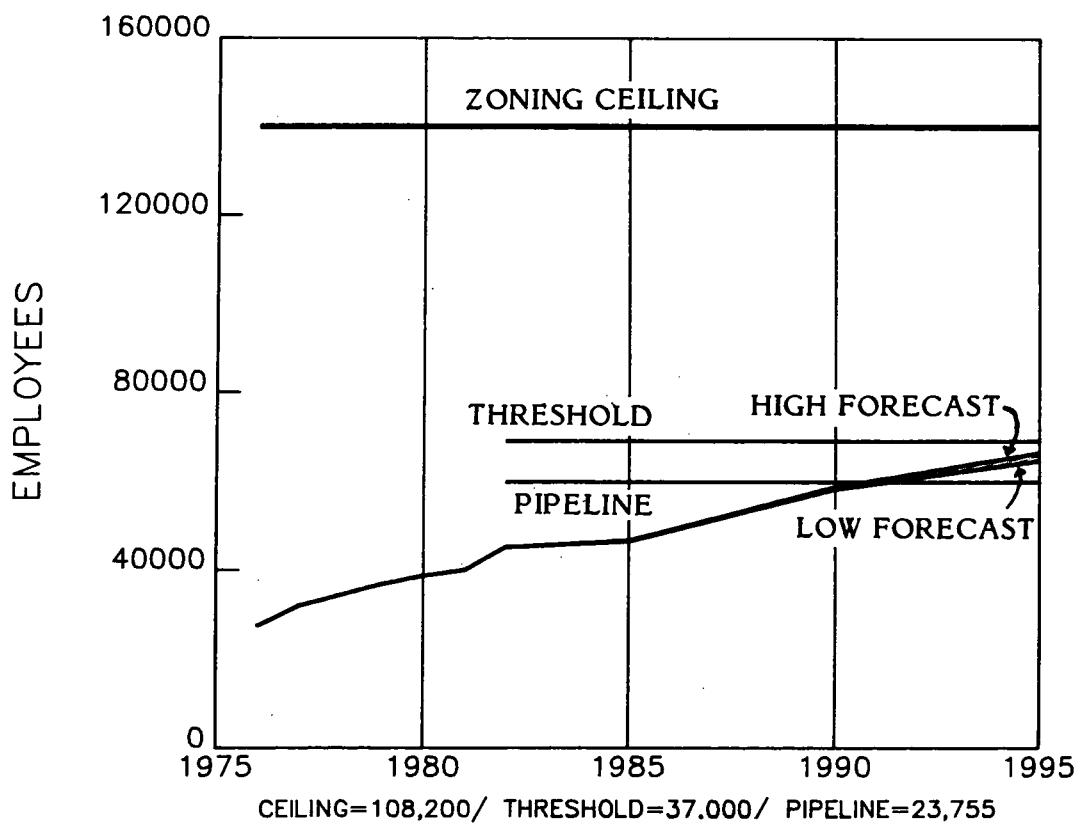
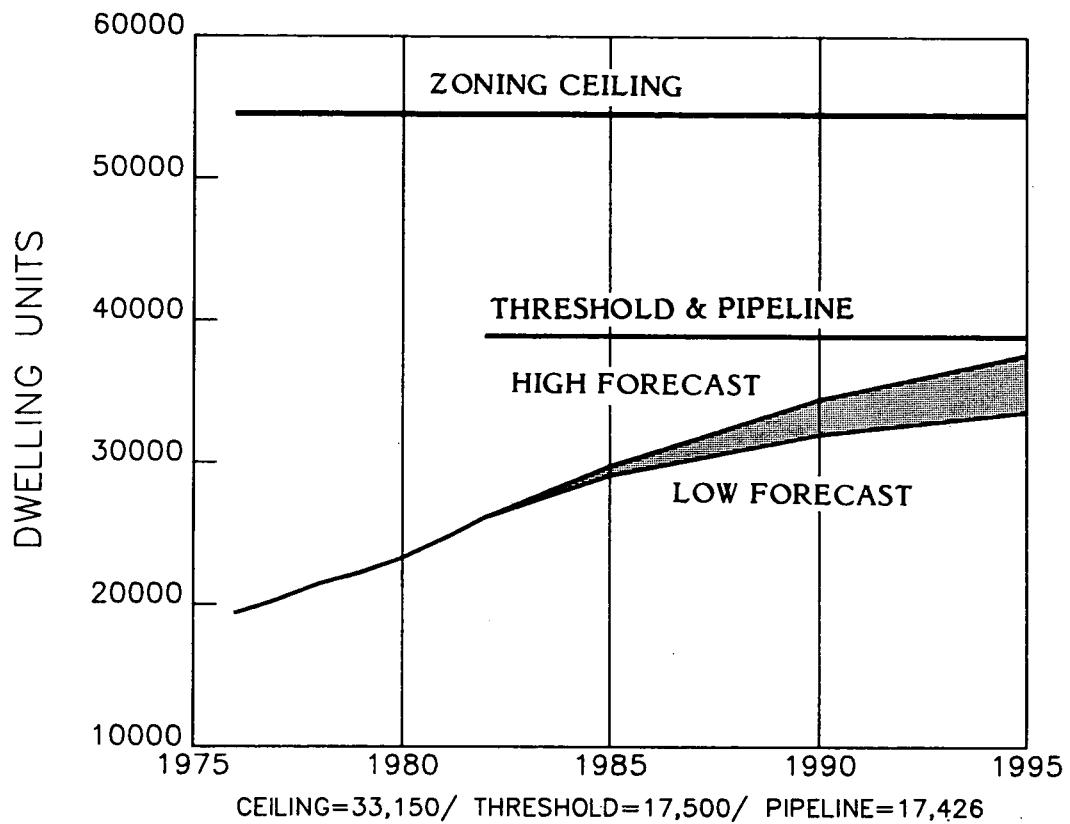
The recommended thresholds for this area are 17,500 dwelling units and 37,000 employees. These thresholds do account for development within the City of Gaithersburg. Subtracting pipeline activity and growth since 1977, capacity exists for subdivision approval of an additional 74 dwelling units and 13,245 additional employees.

Considerations for the Future

Areas of Local Congestion: There are several locations within the Gaithersburg area for which local area transportation review will be required. Among these are: (1) the Shady Grove Road and I-270 interchange area, (2) Shady Grove Road east of I-270, (3) along MD 28 west of Rockville, (4) in the vicinity of the Montgomery Village Avenue/MD 355 intersection, (5) areas near the County Airpark and the MDs 115/124 intersection, and (6) areas in the vicinity of MD 355 and Gude Drive.

Recommended Transportation Improvements: A number of major projects are needed to provide additional capacity in this area. The MdDOT has recently recommended placing the proposed I-370, the Metro Connector, into their next year's capital construction program. That represents their most important recommended new project. A very important project that MCDOT should add to the proposed CIP is the widening of Shady Grove Road from Key West Avenue to I-270. Such a widening should probably be included as part of the currently programmed Shady Grove Road Interchange Improvement. A high priority for project planning initiation by MdDOT is a study of MD 28 (Darnestown Road) Relocation. Existing congestion problems in that area have kept this as a high priority. The study has been one recommended for the past three years by the local elected officials for MdDOT to consider. Other projects which would be desirable for MCDOT to implement include: (1) the proposed western extension of I-370 between Great Seneca Highway and Fields Road; and (2) improvements to Goshen Road from Oden'hal Road to Snouffer School Road. The MdDOT should also begin programming for construction of at least two lanes of the Eastern Arterial from Shady Grove Road to MD 97 (Georgia Avenue). During the past year, this segment of the Eastern Arterial received location approval from the Federal Highway Administration.

GAITHERSBURG POLICY AREA



NORTH BETHESDA

Existing Conditions

Transit Availability: The North Bethesda area is well served by regional bus service, some MCDOT Ride-On service, commuter rail service from Garrett Park, two fringe park-n-ride lots, as well as express bus service to and from the Silver Spring Metro Station via the Capital Beltway. Metrorail service will begin in mid-1984 at Grosvenor, White Flint, and Twinbrook, and will be augmented by a restructured bus system feeding the stations and their immediate vicinities.

Critical Intersections and Roadway Segments: There are many intersections in the North Bethesda area at or approaching Level of Service E. Such conditions can be found along Montrose and Randolph Roads, Rockville Pike, Old Georgetown Road, Democracy Boulevard, and Twinbrook Parkway.

Programmed Transportation Improvements

Some of these congestion conditions may be improved, either temporarily or over the long term, by the programmed transit and roadway improvement projects such as the extension of Tuckerman Lane and transit access projects in the vicinity of the White Flint Station. The relatively large number of projects in this area are intended to relieve existing problems, provide necessary access to the Metro Stations, and to serve future development.

Construction funding for the Fernwood Road bridge over I-270, which was available within six years when the 1981 thresholds were established, has been moved beyond the six-year period. Ritchie Parkway between Seven Locks Road and Rockville Pike is over 50 percent funded for construction, rather than 100 percent as reported in 1981. The widening of East Jefferson Street between Montrose Road and Rollins Avenue is a new CIP project.

Thresholds and the Relationship to Planned Development

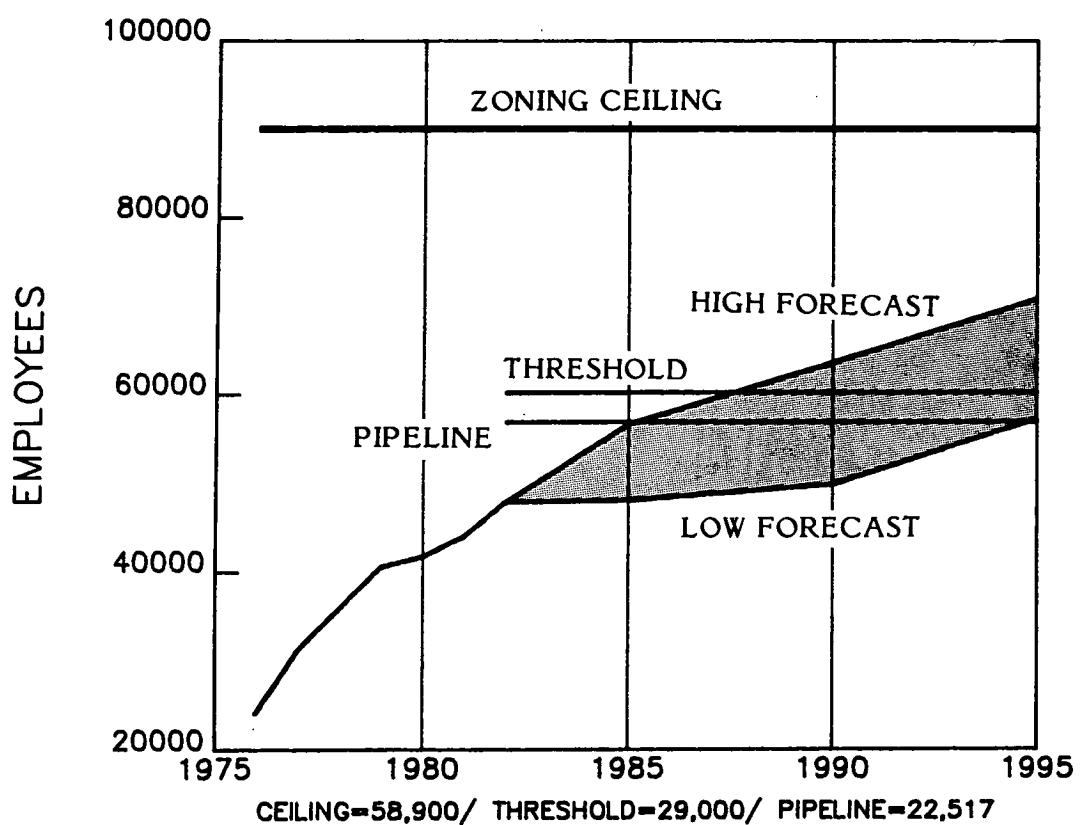
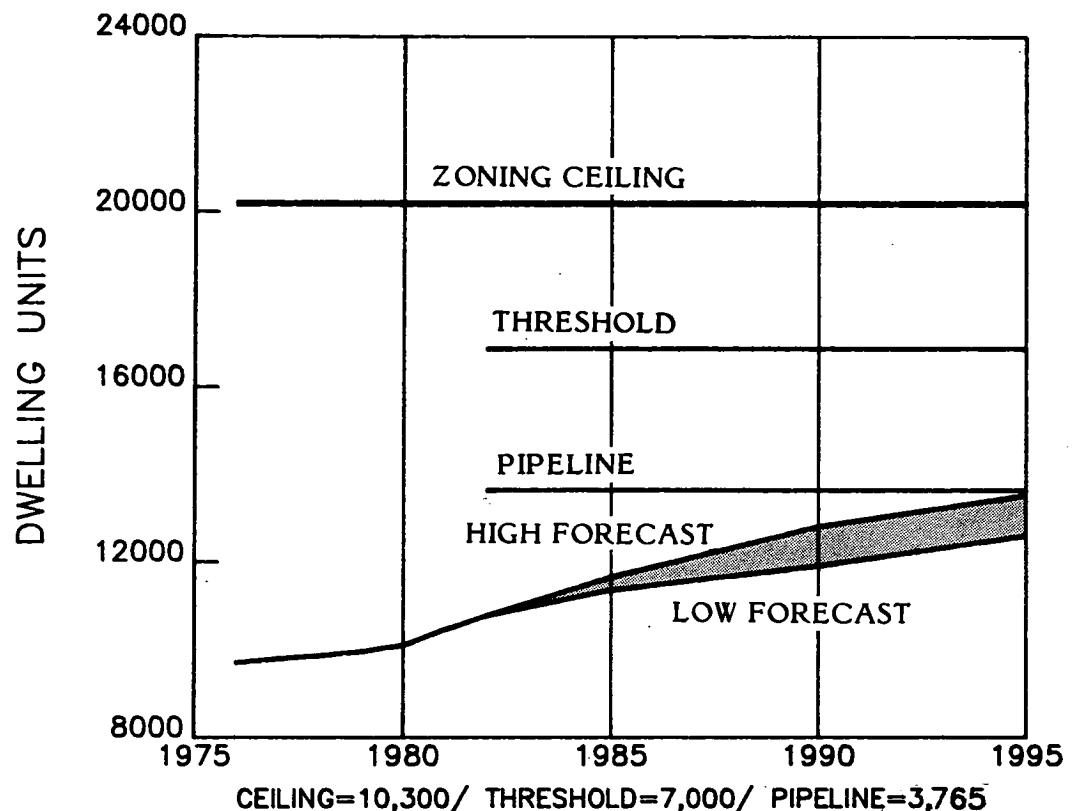
The recommended thresholds for this area are 7,000 dwelling units and 29,000 employees. The North Bethesda Policy Area contains only the planning area of North Bethesda/Garrett Park. The thresholds do not include development within the City of Rockville since the City has its own planning and zoning powers. Subtracting the pipeline and growth since 1977 from the thresholds will allow the approval of 3,235 additional dwelling units and about 6,483 additional employees.

Considerations for the Future

Areas of Local Congestion: There are several locations within the North Bethesda area for which local transportation reviews may be required. Among these are Davis Tract, Montrose Road/East Jefferson Street and Twinbrook Parkway locations. Several recent subdivision reviews in this policy area have required intersection improvements in order to pass the APFO requirements.

Recommended Transportation Improvements: The project planning study by the State Highway Administration for the Rockville Facility may identify feasible transportation improvements which could further increase the threshold in this area. In the event that the MdDOT would not be able to fund such improvements in the near future, MCDOT should give consideration to carrying out either interim improvements or some of the higher priority recommendations. It is expected that specific improvements to Montrose Road in the vicinity of East Jefferson Street and MD 355 (Rockville Pike) will be identified. Given the existing traffic problems in this area and the need for convenient access to Metro, such improvements should be given a fair degree of priority from a Countywide perspective. Of roughly equal importance would be the full funding for construction of the current CIP project for the Fernwood Road Bridge over I-270. The Executive and Council should provide for such funding in the forthcoming CIP.

NORTH BETHESDA POLICY AREA



KENSINGTON/WHEATON

Existing Conditions

Transit Availability: This area is well served by regional bus service, several MCDOT Ride-On routes, commuter rail service, a park-n-ride lot, as well as express bus connection to the Silver Spring Metro Station.

Critical Intersections and Roadway Segments: There are several intersections in the area currently operating at Level of Service E, and about a dozen at Level of Service D. Most of these congested conditions occur along Randolph Road, Georgia Avenue, Connecticut Avenue, Viers Mill Road, and University Boulevard.

Programmed Transportation Improvements

There are a few projects which are fully programmed for construction in the northern part of this area and some in the vicinity of the transit stations. Construction of the Glenmont Line, north of Silver Spring, has started and the remainder is programmed for construction within the CIP.

Thresholds and the Relationship to Planned Development

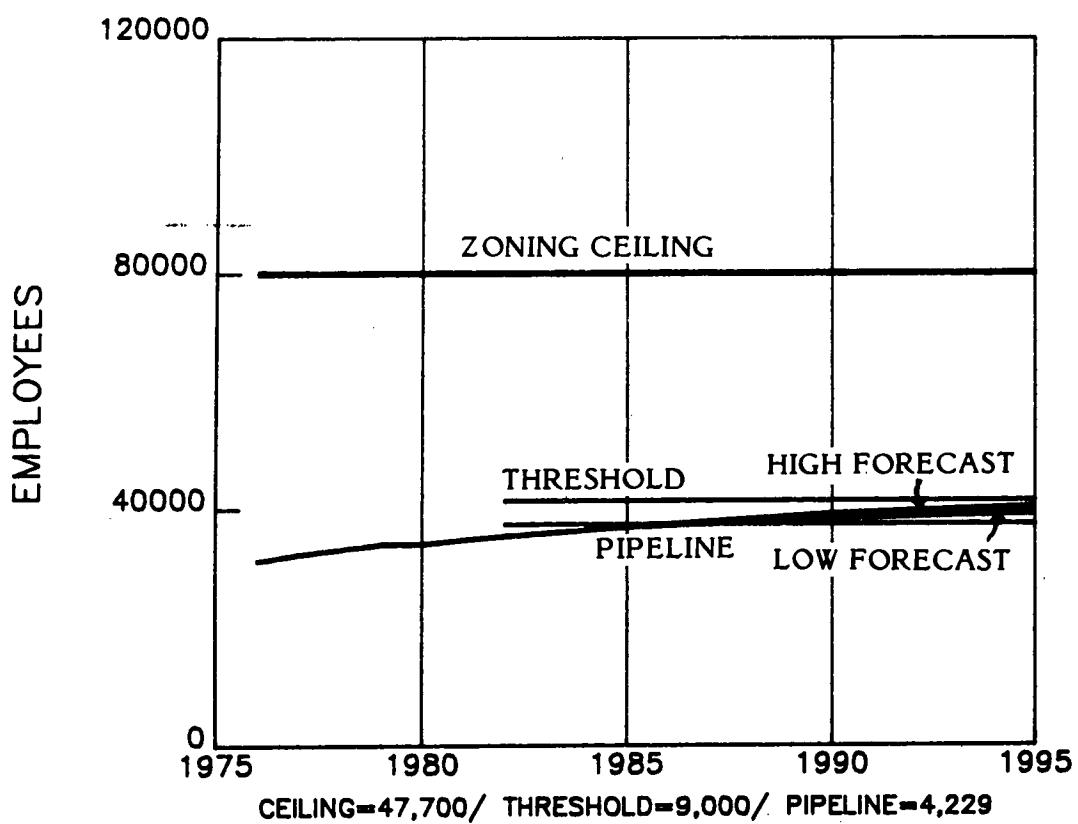
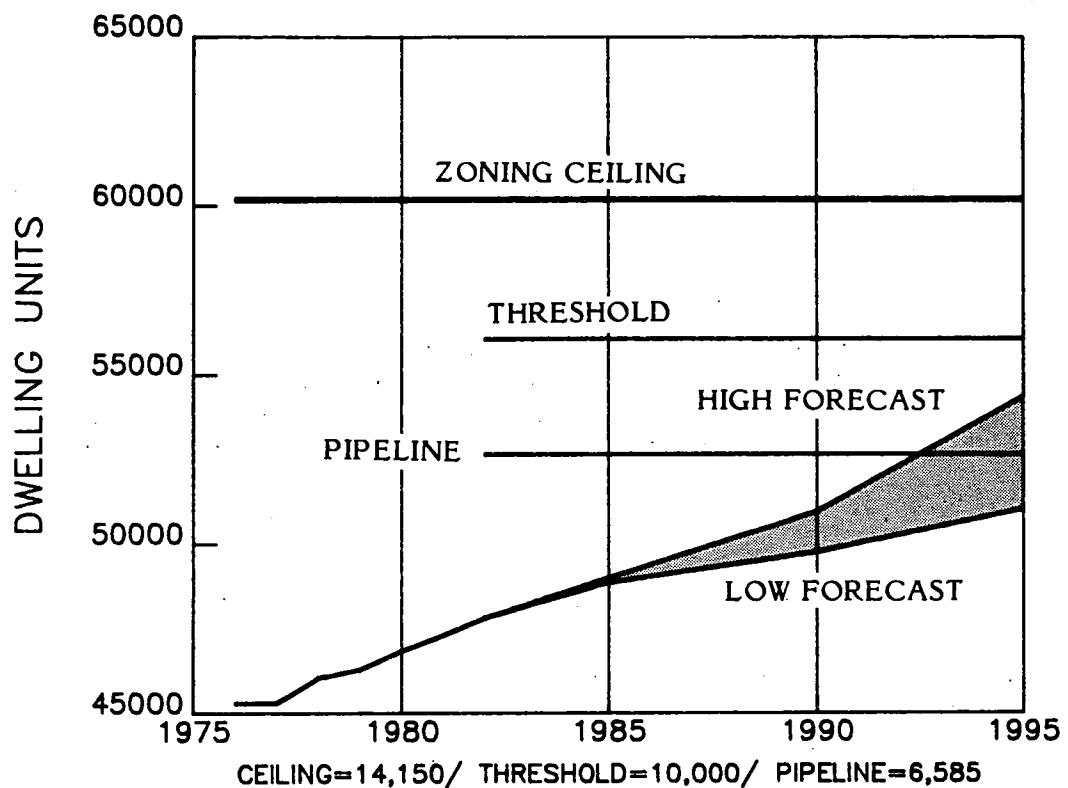
The thresholds for this area recommend 10,000 dwelling units and 9,000 employees. Subtracting the pipeline and growth since 1977 from the thresholds will permit an additional 3,415 dwelling units and 4,771 employees.

Considerations for the Future

Areas of Local Congestion: There are several locations within the Kensington/Wheaton Area for which local area transportation reviews will be required. Among these are Kensington Business District, Wheaton Central Business District, Glenmont Business District, Randolph and Viers Mill, Bel Pre and Georgia, and Georgia and Dennis Avenue locations.

Recommended Transportation Improvements: The MdDOT is proposing to add to the proposed FY 83-88 CTP the widening of Layhill Road from Georgia Avenue to north of Bel Pre/Bonifant Road. This project has also received location approval by the State Highway Administration during this past year. Such a project would not only address long-standing safety concerns along Layhill Road, but could also add to the threshold capacity in this area. The Project Planning Study by the State Highway Administration for the Rockville Facility may identify feasible transportation improvements which could further increase thresholds in this area. In the Four Corners portion of this policy area, the MdDOT should program a special project to make traffic operation improvements at the intersection of US 29 (Colesville Road) and MD 193 (University Boulevard). This location has been and will continue to be one of the most heavily congested locations in the County.

KENSINGTON/WHEATON POLICY AREA



BETHESDA

Existing Conditions

Transit Availability: This area is served by regional bus service and will shortly have a full range of transit services with the opening of the Metrorail line to Shady Grove in late 1984.

Critical Intersections and Roadway Segments: There are many intersections in the Bethesda area which are operating at or approaching Level of Service E. Such conditions are found along River Road, Old Georgetown Road, Wisconsin Avenue, and Connecticut Avenue.

Programmed Transportation Improvements

Some congestion conditions will be improved in the short-term, and possibly the long-term by the programmed transit and station access improvements. Stations serving the Bethesda area will be at Friendship Heights, downtown Bethesda, and at the Medical Center. The rail service will be augmented by a restructured Metrobus service feeding the stations and their immediate vicinities as well as by the initiation of MCDOT Ride-On community bus service. The County Executive has recommended that pre-Metro Ride-On service in the Bethesda area start in the Fall of 1983. The limited number of road projects in this area are intended to provide station access and facilitate local circulation within the Central Business Districts of Friendship Heights and Bethesda.

Thresholds and the Relationship to Planned Development

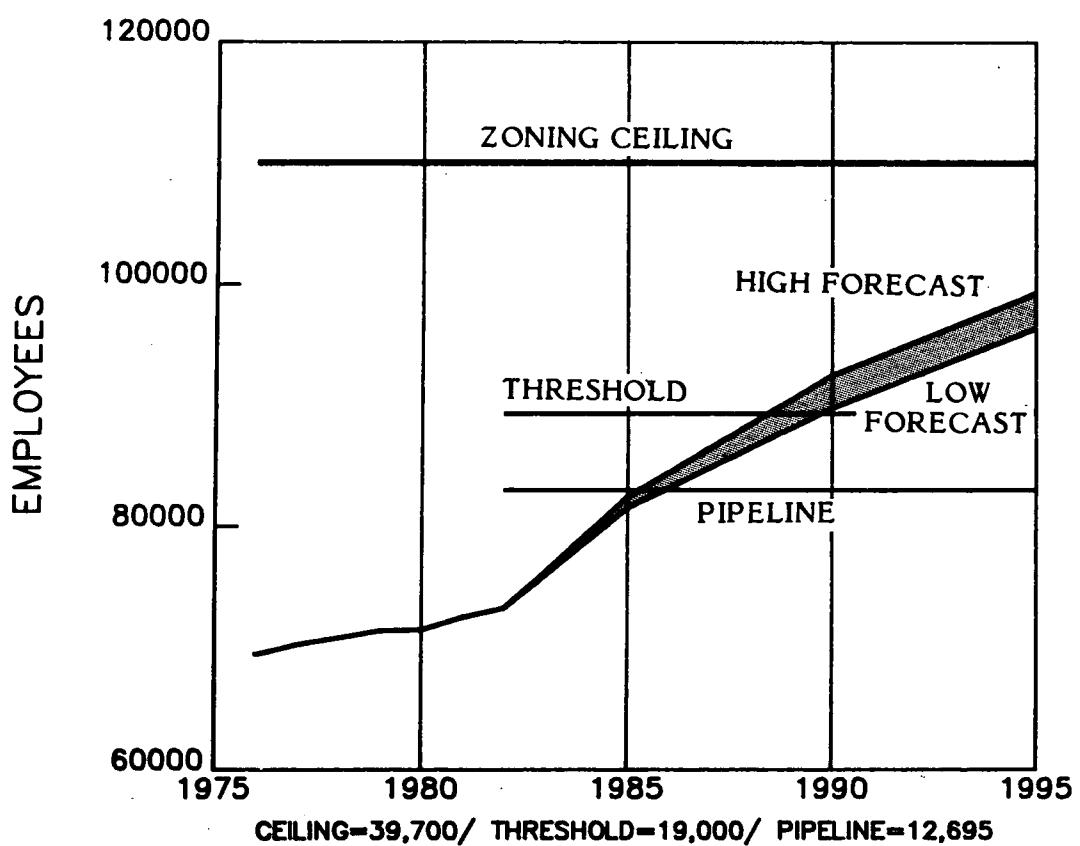
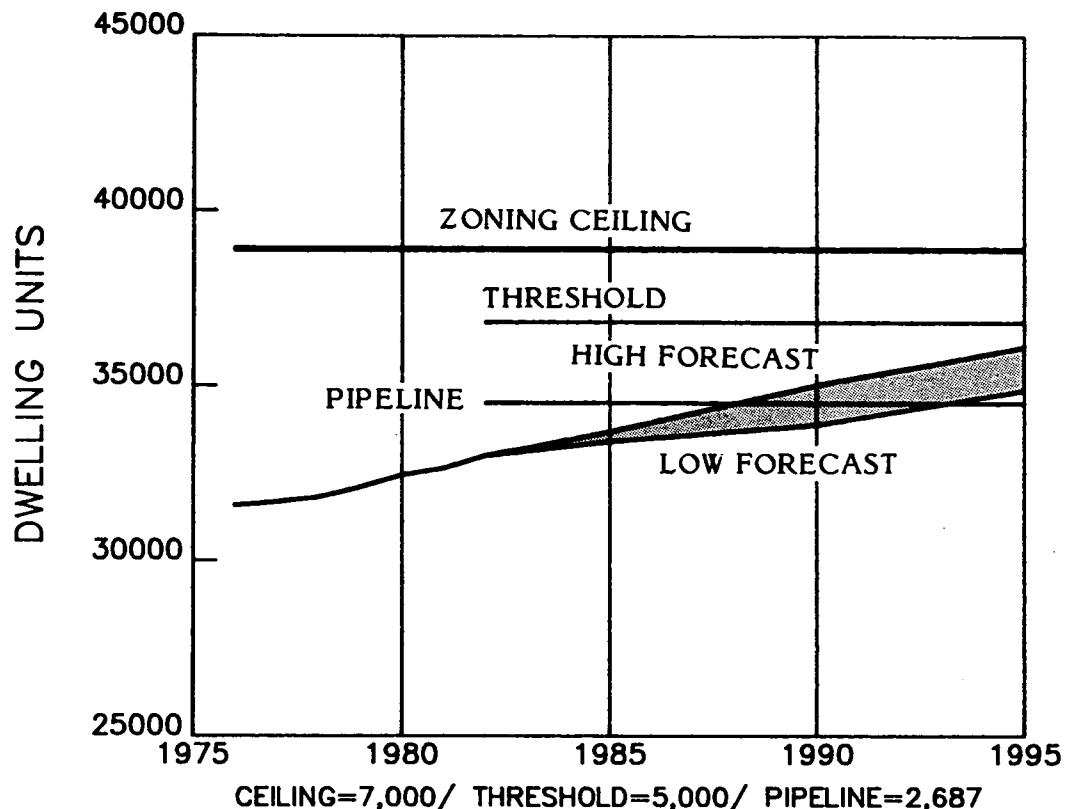
The recommended thresholds for this area are 5,000 dwelling units and 19,000 employees. Subtracting pipeline and growth since 1977 will allow the approval of 2,313 additional dwelling units and about 6,305 employees. The Friendship Heights Sector Plan limits development within that area in absolute terms on a parcel-by-parcel basis. It does not recommend staging or threshold limits, and thus the thresholds do not change the amount or timing of development in Friendship Heights. The thresholds for the Bethesda Policy area do not allow more growth than the recommendations in the Bethesda Sector Plan. (See Bethesda Sector Plan Extract in Chapter I of this document.) Therefore, in the Bethesda Sector Plan area part of the Bethesda Policy Area, local area transportation reviews will not be required.

Considerations for the Future

Areas of Local Congestion: There are several locations within the Bethesda Policy Area for which local area transportation review will be required. Among these are Westbard, Chevy Chase Lake, and Friendship Heights locations.

Recommended Transportation Improvements: The MdDOT is proposing the addition of the widening of I-495 (Capital Beltway) from Wisconsin Avenue to Georgia Avenue. This should provide for increases in the thresholds in this area. Such an improvement has been a long-standing need and a high priority for implementation by the State. There is the possibility of various local improvements being identified during Local Area Transportation Reviews and further work associated with refinements to master and section plans in this area.

BETHESDA POLICY AREA



SILVER SPRING/TAKOMA PARK

Existing Conditions

Transit Availability: The Silver Spring/Takoma Park area has better transit availability than any other area in the County. The Metrorail stations at Silver Spring and Takoma Park are supported by an extensive feeder bus system. The MCDOT's Ride-On Buses also provide feeder service as well as community transit service. The area is also well served by regional bus and commuter rail service.

Critical Intersections and Roadway Segments: There are several intersections in this area that are operating at or approaching Level of Service E. Such conditions are found along East-West Highway, on Georgia Avenue in Montgomery Hills, along Colesville Road, and on University Boulevard.

Programmed Transportation Improvements

The only transportation projects in this area are ones intended to facilitate local circulation within the Silver Spring Central Business District (CBD).

Thresholds and the Relationship to Planned Development

The recommended thresholds for this area are 8,000 dwelling units and 18,000 employees. Approximately 6,985 additional dwelling units and 14,365 employees could receive subdivision approval. Silver Spring is the subject of a joint revitalization program sponsored by the County, the Planning Board, and local groups. Efforts are being undertaken to attract significant new development to the downtown Silver Spring area.

Considerations for the Future

Areas of Local Congestion: There are few locations within the Silver Spring/Takoma Park area for which local area transportation reviews could be expected to be required. Among these are Montgomery Hills and possibly some portions of the CBD.

Recommended Transportation Improvements: The MdDOT is recommending the addition of the widening of I-495 (Capital Beltway) from Wisconsin Avenue to Georgia Avenue in the proposed FY 83-88 CTP. This should provide for increases in the thresholds in this area. Such an improvement has been a long-standing need and a high priority for implementation by the State. There is the possibility of various local improvements being identified during the Local Area Transportation Reviews. In addition, improvements to the transit facilities serving Silver Spring are under study and such improvements could further reduce the potential for too much local congestion.

SILVER SPRING/TAKOMA PARK POLICY AREA

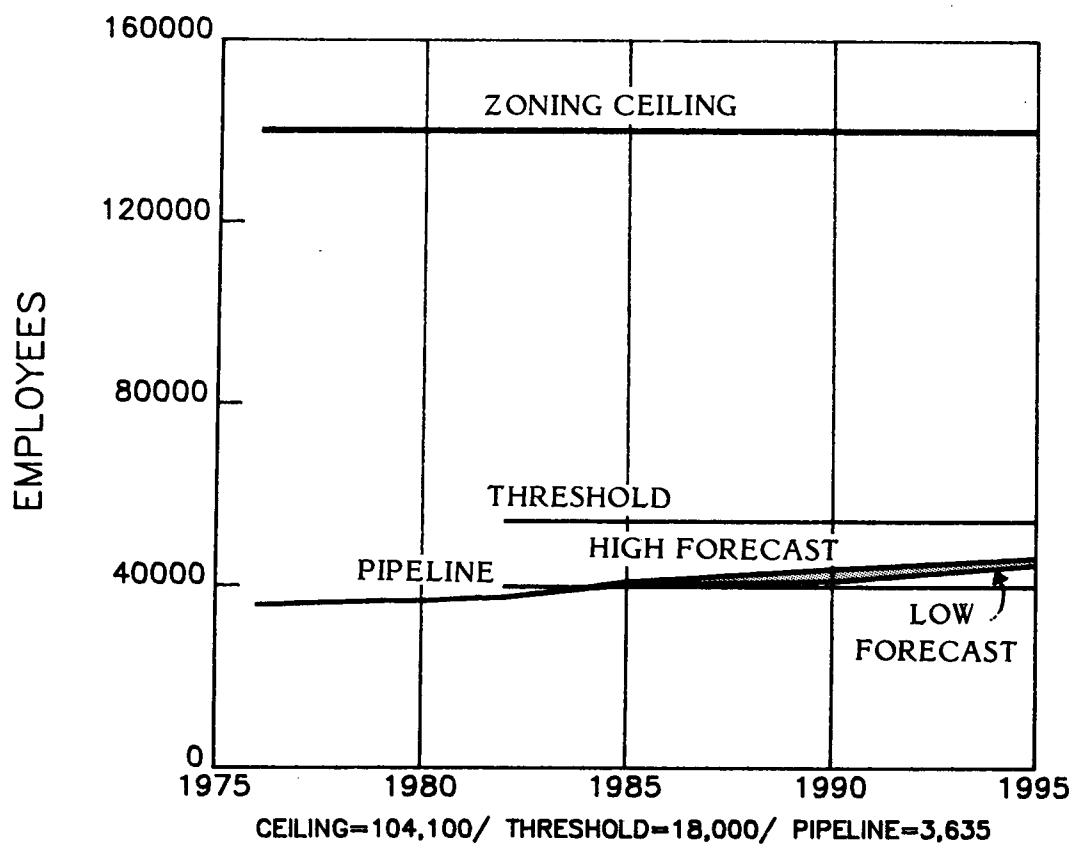
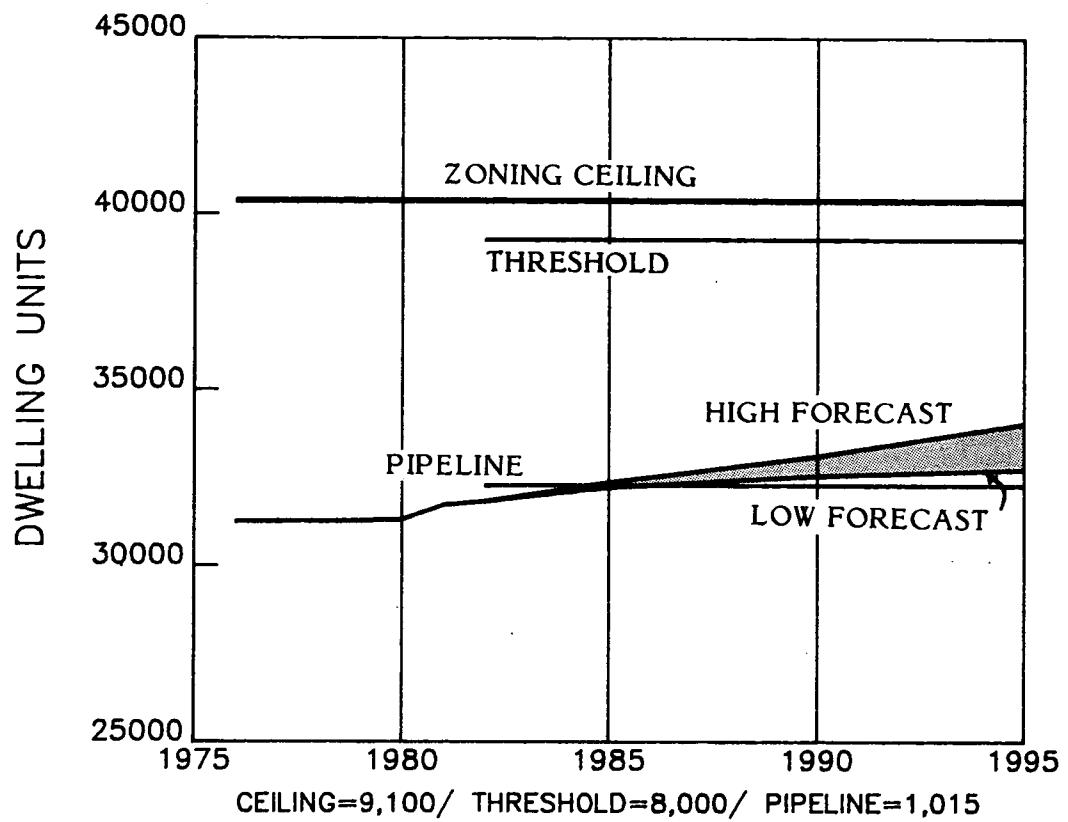


TABLE 25

LISTING OF HIGHWAY PROJECTS BY POLICY AREA WHICH ARE AT LEAST FIFTY PERCENT PROGRAMMED FOR CONSTRUCTION IN THE MONTGOMERY COUNTY FY 1983-88 CIP OR THE MDDOT FY 1982-87 CONSOLIDATED TRANSPORTATION PROGRAM

OLNEY

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Georgia Avenue	Norbeck Road (MD 28) to MD 108	County
Intersection Improvement	Georgia Avenue at Emory Lane	County

GERMANTOWN WEST

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Great Seneca Highway	Middlebrook Road to Darnestown Road (MD 28)	County
Bridge Replacement	Waring Station Road	County

GERMANTOWN EAST

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Intersection Improvement	Germantown Road (MD 118) at Frederick Ave. (MD 355)	County

CLOVERLY

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Bonifant Road	Layhill Road to New Hampshire Avenue	County
Good Hope Road Realignment	To New Hampshire Avenue and New Bonifant Road	County
Intersection Improvements	New Hampshire Avenue at Notley Good Hope and Norwood Roads	County

TABLE 25 (Cont'd.)

POTOMAC

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Seven Locks Road Resurfacing and Realignment	MacArthur Boulevard to Lillystone Drive	County
Montrose Road Extended	Seven Locks Road to Falls Road	County
Democracy Boulevard Extended	Seven Locks Road to Kentsdale Drive	County

FAIRLAND/WHITE OAK

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Sandy Spring Road (MD 198)	US 29 to I-95	State
Randolph/East Cherry Hill Road	US 29 to Prince Georges Line	County
Subdivision Participation	New Hampshire Avenue at Lockwood Drive	County/Developer
Columbia Pike (US 29)	Industrial Parkway to Musgrove Road	County
Intersection Improvement	US 29 at Randolph/East Cherry Hill Road	County
East Randolph Road	New Hampshire Avenue to Fairland Road	County

GAIITHERSBURG

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Frederick Avenue (MD 355)	Shady Grove Road to South Summit Avenue	State
Quince Orchard Road	Darnestown Road (MD 28) to Clopper Road	State/County

TABLE 25 (Cont'd.)

GAITHERSBURG (Cont'd.)

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Frederick Avenue (MD 355)	South Summit Avenue to Chestnut Street	State
I-270 Interchange	West Diamond Avenue (MD 117) to MD 124	State
Crabbs Branch Way	Shady Grove Road to Redland Road	County
Eastern Arterial	Montgomery Village Avenue to Shady Grove Road	County
Fields Road	Piccard Drive to MD 355	County
Fields Road	Muddy Branch Road to Shady Grove Road	County
Gaither Road	Shady Grove Road to Fields Road	County
Great Seneca Highway	Middlebrook Road to Darnestown Road (MD 28)	County
Longdraft Road	Quince Orchard Road to Clopper Road	County
Omega Drive	Fields Road to Key West Avenue	County
Shady Grove Road	I-270 to Briardale Road	County
Shady Grove Road Bridge & Interchange Improvements	at I-270	County/State
Key West Avenue/MD 28	Shady Grove Road to Darnestown Road/Treworthy Road; widen MD 28 at Shady Grove Road and between Research Boulevard and I-270	County/State/Developer
Watkins Mill Road Bridge	at Whetstone Run	County/City

TABLE 25 (Cont'd.)

GAIITHERSBURG (Cont'd.)

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Clopper Road	Longdraft Road to Quince Orchard Road	Gaithersburg
Russell Avenue	Watkins Mill Road to Montgomery Village Avenue	Gaithersburg
Centerway Road Extension	Snouffers School Road to Strawberry Knoll Road	County

NORTH BETHESDA

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Veirs Mill Road Bridge (MD 28)	MD 355 to Woodburg Avenue	State
First Street Extended	MD 355 to Veirs Mill Road	Rockville
Gude Drive Extension	MD 355 to Research Boulevard	Rockville/County
East Gude Drive	MD 355 to Southlawn Boulevard	County
Research Boulevard Connection	to Gude Drive	Rockville
Tuckerman Lane	Old Georgetown Road to MD 355 and Metro Station	County
Transit Access Projects	Several Projects near White Flint and Twinbrook	County
Ritchie Parkway	Seven Locks Road to MD 355	Rockville/County/State/Developer
Aspen Hill Road Extended	Veirs Mill Road to Twinbrook Parkway	County
East Jefferson Street	Montrose Road to Rollins Avenue	County

TABLE 25 (Cont'd.)

KENSINGTON/WHEATON

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Norbeck Road (MD 28)	Bauer Drive to Georgia Avenue	State
Bel Pre Road	Georgia Avenue to Layhill Road	County
Transit Station Access Projects	Glenmont, Wheaton and Forest Glen Stations	County/State

BETHESDA

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
East-West Highway Cupplet	Wisconsin Avenue (MD 355) to B & O Railroad	State
Transit Station Access and Business District Circulation Projects	Bethesda and Friendship Heights Stations	County

SILVER SPRING/TAKOMA PARK

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Roeder Road	Spring Street to Fenton Street	County
Bonifant Street	Georgia Avenue to Ramsey Avenue	County

LOCAL AREA TRANSPORTATION REVIEW

1. Introduction

The intent of these procedures in this guideline is to permit the Planning Board to withhold approval of an application, even though it would not exceed the threshold, if it is demonstrated that the development will produce excessive local traffic congestion which is likely to induce a significant detrimental effect on adjacent land use and which is unlikely to be relieved by alternative routes or modes of travel. It is equally important for the Planning Board to use these procedures to help it develop information which can be used to give guidance to the various Capital Improvement Programs of the implementing agencies.

2. Criteria for Screening Cases for Local Area Transportation Review

Planning staff will use the following criteria to determine whether the applicant needs to submit sufficient information and data on the proposed subdivision to carry out a Local Area Transportation Review. To the extent possible, this screening should be carried out prior to a formal subdivision application being submitted to the Development Review Division. It also could be done as part of a preliminary consideration by the Development Review Committee. If the development review staff determines by these screening criteria that a Local Area Transportation Review is necessary, the developer's application will not be considered complete until the appropriate information and data are submitted. There are two exceptions regarding conducting a Local Area Transportation Review:

- 1) The "Bethesda Policy Area" development located within the Bethesda Sector Plan area will be reviewed in accordance with the recommendations of the staging element of the Bethesda Sector Plan, and
- 2) The "Potomac Policy Area" part of the Potomac planning area will be reviewed in accordance with the adopted Master Plan for the Potomac Subregion.

A Local Area Transportation Review is required if the combination of the conditions identified in the following paragraphs are A & B, A & C or all three:

- A. Significantly Sized Project: The proposed development is of sufficient size to have a measurable impact on a specific local area to be considered in a local review. This is taken to mean either a standard of fifty or more dwelling units in the proposed development or a non-residential development which would generate fifty or more peak hour trips according to the appropriate category in the Institute of Transportation Engineers Trip Generation Handbook. It is recognized that in the actual Local Area Transportation Review it could be determined that a trip generation value different from the handbook may be more appropriate. It is presumed that smaller sized subdivisions can only be considered in the area-wide aggregate review of the new overall procedures.

In determining whether or not a total of fifty or more dwelling units or trips are involved for the purpose of applying the requirements of Local Area Transportation Review, all land at one location within the County available for building development under common ownership or control by an applicant,

including that land owned or controlled by separate corporations in which any stockholder (or family of the stockholder) owns ten percent or more of the stock, shall be included. An applicant shall not avoid the intent of this requirement by submitting piecemeal applications or approval requests for subdivision plats, site or development plans, or building permits. Any applicant may submit a preliminary subdivision plat for approval for less than fifty dwelling units or fifty peak hour trips at any one time provided such applicant must agree in writing that upon the next such application, or request, the applicant will comply with the requirements of Local Area Transportation Review when the total number of requests at one location has reached fifty or more dwelling units or fifty or more trips.

The phrase "at one location" means all adjacent land of the applicant, the property lines of which are contiguous or nearly contiguous at any point, or the property lines of which are separated only by a public or private street, road, highway or utility right-of-way or other public or private right-of-way at any point, or separated only by other land of the applicant, which separating land is not subject to the requirements of Local Area Transportation Review at the time of application for preliminary subdivision plat approval.

- B. Nearby Congestion: The proposed development is located near roadways, intersections or sets of intersections which are already heavily congested. This is taken to mean a standard of having a critical intersection operating at Level of Service D or lower in the vicinity of the proposed development, or for the development to be located near a roadway segment already identified by the Planning Board for consideration by the State or County for widening and/or upgrading. The Transportation Planning Division is maintaining an Intersection Level of Service Inventory based upon traffic counts collected primarily by the MCDOT. The inventory gives the most congested level of service conditions for a one hour period either in the A.M. or P.M.. In addition, the SHA periodically conducts aerial surveys which develop estimates of level of service conditions along major state highways, as well as their interchanges or intersections. The Planning Board periodically gives recommendations to both the SHA and the MCDOT regarding specific segments of existing roadways in need of widening or upgrading, as well as roadways on new locations. The most recent set of Planning Board recommendations will be used in this screening process.
- C. Development Level Approaching the Threshold: When the proposed development is added to: (1) completions since the threshold base year; and (2) outstanding sewer authorizations; and when the resulting total development is within 5 percent of the approved threshold for the area, this condition for a local area review is met. As an example, if the threshold for an area is 2,000 households, and if the sum of the housing completion, outstanding sewer authorizations, and the proposed subdivision is greater than 1,900, then this condition is met.

3. Findings for Inadequate Facilities

The Planning Board staff report will present findings for each of the categories identified below and give a recommendation relating to the adequacy of the transportation

facilities. The Planning Board will use these findings to make its overall findings as to adequacy of public facilities for the proposed development.

- A. Transportation Solutions: Staff will identify the degree to which there are remedial transportation solutions to obtain adequate local transportation capacity. These solutions can include additional traffic engineering or operating changes beyond those currently programmed, major capital improvements beyond those currently programmed, or non-programmed transit or ridesharing activities which would make the overall transportation system adequate.
- B. Degree of Local Congestion: Staff will identify the degree of congestion forecasted for both A.M. and P.M. peak hours. Staff will present findings of the degree to which the forecasted traffic exceeds the maximum capacity of the nearby road system. The mid-point of Level of Service E is presumed the condition under which the transportation facilities as a total system are operating at maximum capacity. Critical Lane Volumes higher than the mid point of Level of Service E are deemed to reduce the overall efficiency of the road network. Because the experience of congestion is felt by road users and adjacent land uses before this level is reached, a judgement must be made in each case regarding the degree of detrimental impact that can be tolerated. The degree of local congestion will be considered to be more severe if both the A.M. and P.M. peak hour traffic conditions are beyond the mid point of Level of Service E.
- C. Unavoidable Congestion: Staff will identify the degree to which there are alternate routes or paths to serve the traffic associated with the proposed development. If there are no appropriate alternate routes for that traffic to use to avoid the congestion, then it must be assumed that traffic from the proposed development will increase the local area congestion. It is not appropriate to anticipate that the traffic associated with the development would use local streets unless those streets have been functionally classified as being suitable for handling that generated traffic.
- D. Transit Unavailability: Staff will identify the degree to which transit or ridesharing activities are not available to serve the proposed development. If it is physically or fiscally ineffective for the public agencies to provide transit or ridesharing services, then the local congestion, likely to be caused by the proposed development, cannot be significantly absorbed through this alternative mode of travel. If there is sufficient potential for serving the proposed development with transit or ridesharing services, then it is possible that a transit alternative could be developed for modifying the demand contributing to the severe congestion.
- E. Project Related Traffic: Staff will identify the degree to which the congestion problem is directly attributable to the proposed development. Traffic from three sources will be measured: (1) existing traffic, (2) traffic which would be

generated by the sum total of all outstanding but unbuilt record plats*, and (3) traffic which would be generated by the proposed development itself. The more that traffic from the proposed development contributes to the congestion problem, the greater the severity of the local impact.

4. Method and Preparation of Local Area Transportation Review

The following general criteria and analytical techniques are to be used by applicants in submitting sufficient information and data on a proposed subdivision to demonstrate the expected impact on and use of public roadways by the residents or occupants of said subdivision. In addition to the consideration of existing traffic associated with present development, the applicant shall include in the analysis potential traffic which will be generated by his subdivision and other "nearby" recorded lots to be included in the analysis. Information and data on the other "nearby" recorded lots will be supplied to the applicant during the initial review at the Subdivision Review Committee meeting. At this or at a subsequent meeting with transportation staff, the following aspects of the traffic impact analysis will also be agreed upon:

- 1) which intersections are to be included in the traffic impact analysis;
- 2) adequacy of available turning movement counts and need for additional data;
- 3) period of analysis (A.M. or P.M. or both);
- 4) trip generation rates, especially for commercial development;
- 5) directional distribution of site-generated and platted traffic;
- 6) mode split assumptions;
- 7) programmed projects to be considered in the analysis, along with techniques for estimating traffic diversion to major new programmed facilities;
- 8) link adequacy and trends in traffic growth; and
- 9) feasible range of traffic engineering improvements associated with implementing the development.

A. **Trip Generation:** Trip generation rates for residential development are shown in the accompanying table. Rates for other land uses or zoning classifications can be obtained from sources such as recent compilations assembled by The Institute of Transportation Engineers and will be provided by the Transportation Planning Staff of the Planning Board. Generated trips for development of mixed land uses will be determined by combining the trips generated by each of the component uses in the mix. Where it can be demonstrated that peak hours for different land uses occur at different times, the single hour that results in the highest total volume on the street system will be controlling.

* Note that the Local Area Review counts Record Plats rather than Sewer Authorizations. This is due to cost and difficulty of securing sewer authorization data on a weekly basis from the WSSC. Staff will consider, as a judgmental factor, the relative relationship between plats and authorizations as of the last previously recorded comparison.

Housing Type	Zoning Categories	TRIP Generation Rates
High-Rise Apt.	RH, R-10	5 to 7 trips/day/dwelling unit
Townhouses	RT	6 to 8 trips/day/dwelling unit
Garden Apt.	R-20, R-30	6 to 8 trips/day/dwelling unit
Single-Family	All other residential classes	8 to 10 trips/day/dwelling unit

- B. **Peak Hour Percent:** A peak hour percent of 10 percent of the daily trips will be assumed for residential development. For other uses, information from other accepted sources such as the Institute of Transportation Engineers (ITE) publications will be utilized as agreed upon by the staff and applicant.
- C. **Peak Hour:** The applicants shall use the peak one hour period which occurs during either the 7-9 A.M. or 4-6 P.M. periods or both, as agreed to by the staff and applicant.
- D. **Trip Distribution:** The directional distribution of the generated trips entering and leaving the proposed subdivision via all access points must be justified by the relative locations of other traffic generators (i.e., employment centers, commercial centers, regional or area shopping centers, transportation terminals, etc., and/or the trip table information provided by staff). These same factors or other factors provided by the Subdivision Review Committee shall be applied to the development under study as well as to other "nearby" subdivision plans in their analyses.
- E. **Directional Split:** Trips generated by residential uses will be assumed to have 60-70 percent leaving and 30-40 percent entering the proposed subdivision during the morning peak and 60-70 percent entering and 30-40 percent leaving the proposed subdivision in the evening peak. The split for traffic associated with other land uses is to be derived from ITE published information or other accepted studies, as determined by the transportation planning staff and the applicant.
- F. **Trip Assignment:** The distribution factors shall be applied to the generated trips and the resulting traffic volumes assigned to the road network providing access to the proposed subdivision plus existing and "nearby" future traffic to determine the impact on the adequacy of the transportation facilities. The assignment is to be extended to the nearest major intersection, or intersections, as determined by the Subdivision Review Committee and can include an evaluation of the impact of generated traffic on existing links.
- G. **Critical Lane Analysis:** At the identified major intersection, or each such intersection, the existing and generated traffic is to be related to the adequacy of the intersection by using the "Critical Lane Volume" technique (see Section J) which shall be updated to maintain consistency with the

Highway Capacity Manual revisions. Link volume analysis shall also be related to Highway Capacity Manual standards. The analysis should be carried out for both the A.M. and the P.M. peaks and should use traffic data for non-holiday weekdays. If so desired, alternate capacity and level of service analysis techniques can be used to develop supplemental information.

H. Traffic Data:

1. Traffic volume data is available from either the Maryland Department of Transportation or the Montgomery County Department of Transportation.
2. Data should be adjusted to the current year or new counts should be made by the applicant if, in the opinion of staff, traffic volumes have increased due to some change in the traffic pattern, such as the completion of a development project after the count was made.
3. If turning movement data is older than three years, or if there are locations for which data is non-existent, data must be acquired by the applicants using their own resources. This is in accordance with the Ordinance and part of the applicant's submission of sufficient information and data, consistent with the decisions reached by the Subdivision Review Committee and Transportation Planning Staff.
4. Intersection traffic counts conducted by the applicant must be manual turning movement counts covering the periods of 7-9 AM and 4-6 PM so as to allow selection of the peak hour within the nearest thirty minutes (e.g., 4:00-5:00, 4:30-5:30, or 5:00-6:00). Inclusion of all 7-9 AM and 4-6 PM turning movement data is required to be submitted as part of the applicant's traffic impact analysis.

I. Adequate Accommodation of Traffic: The ability of a highway system to carry traffic is expressed in terms of "Service Level" at the critical locations (usually intersection). "Service Level" is defined alphabetically as follows:

- "A" Conditions of free unobstructed flow, no delays and all signal phases sufficient in duration to clear all approaching vehicles.
- "B" Conditions of stable flow, very little delay, a few phases are unable to handle all approaching vehicles.
- "C" Conditions of stable flow, delays are low to moderate, full use of peak direction signal phase (s) is experienced.
- "D" Conditions approaching unstable flow, delays are moderate to heavy, significant signal time deficiencies are experienced for short durations during the peak traffic period.
- "E" Conditions of unstable flow, delays are significant, signal phase timing is generally insufficient, congestion exists for extended duration throughout the peak period.

"F" Conditions are jammed, full utilization of the intersection approach is prevented due to back-ups from locations downstream.

The following chart indicates the "Critical Lane Volume" ranges to be used in determining "Service Level" for an intersection. Service level volumes for roadway sections and ramps are described in sections eight through ten of the Highway Capacity Manual. ("The Critical Lane Volume" technique is described in Section J.)

<u>Intersection Levels of Service by Critical Lane Volume Ranges</u>										
<u>977 or less</u>	<u>1023 to 1127</u>	<u>1173 to 1277</u>	<u>1323 to 1427</u>	<u>1473 to 1577</u>	<u>1623 or more</u>					
A	A/B	B	B/C	C	C/D	D	D/E	E	E/F	F

978 to 1022 1128 to 1172 1278 to 1322 1428 to 1472 1578 to 1622

J. "Critical Lane Volume" Technique: A technical description of the "critical lane volume" technique is given in the January 1971 issue of Traffic Engineering magazine.** The following step-by-step procedure should be sufficiently descriptive to enable the applicant to utilize the technique at simple two-phase or unsignalized intersections.

The peak hour approaching traffic volume and turning movements for the intersection being analyzed will be determined in the traffic generation and trip distribution phase of the analysis. At unsignalized intersections, a two-phase operation should be assumed.

The following is a step-by-step description of how to determine the Level of Service (LOS) for an intersection.

- Step 1. Note the number of approach lanes from each direction.
- Step 2. Subtract from the total approach volume any right turn volume that operates continuously throughout the signal cycle. (i.e., a free right turn by-pass)
- Step 3. Determine the maximum volume per lane from each approach using the following table. (Note: Do not count lanes established for exclusive use such as left turn storage lanes - the lane use factor for exclusive use lanes is 1.00)

** New methods for doing a critical lane summation analysis are proposed in Transportation Research Board (TRB), Circular 212. These guidelines may subsequently be amended to incorporate those new procedures once they are adopted.

<u>Number of Approach Lanes</u>	<u>Lane Use Factor</u>
1	1.00
2	0.55
3	0.40
4	0.30

Step 4. Select the maximum volume per lane in one direction (e.g., northbound) and add it to the opposing (e.g., southbound) left turn volume.

Step 5. Select the maximum volume per lane operating in the opposite direction of the approach selected in Step 4.

Step 6. The maximum total of Step 4 or Step 5 will be the "critical" volume for phase one (e.g., north-south).

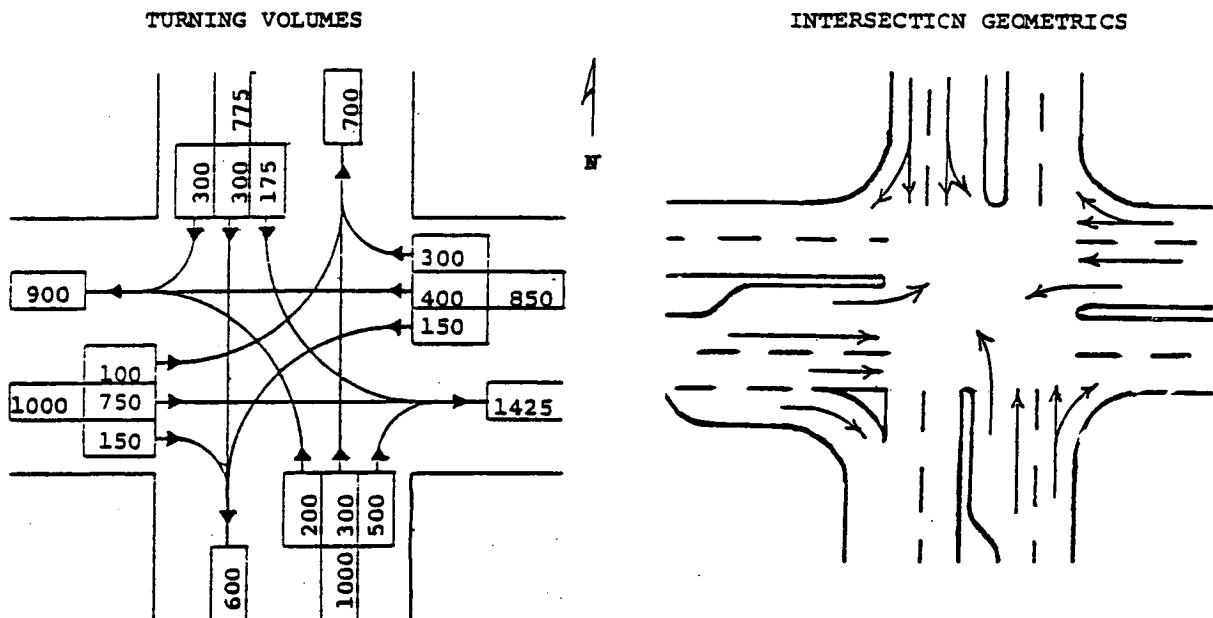
Step 7. Repeat Steps 4 through 6 for lanes operating in phase two (e.g., east-west).

Step 8. Sum the "critical" volumes for each phase.

Step 9. Compare the resultant "Critical Lane Volume" for the intersection with the range table on page 131.

If the intersection under consideration is a complex one with special conditions such as phasing lags, leads, or overlaps, application of the "Critical Lane Volume" technique may require professional assistance such as the aid of consultant traffic engineers or staff from the Maryland Department of Transportation or the Montgomery County Department of Transportation.

"Critical Lane Volume" Technique Example



<u>From</u>	<u>Approach Volume</u>	<u>Lane Use Factor</u>	<u>Critical Approach Volume</u>		<u>Opposing Lefts</u>		<u>Critical Lane Volume Per Approach</u>
N	775 ⁽¹⁾	0.55	426	+	200	=	626
S	800 ⁽²⁾	0.55	440	+	175	=	615
S OR	500	1.00	500	+	175	=	675*
E	700 ⁽³⁾	0.55	385	+	100	=	485
W	750 ⁽⁴⁾	0.55	412	+	150	=	562*

**"Critical Lane Volume" = 675 + 562 = 1,237 vph.

1,237 represents Service Level C (from table on page 131).

- (1) Approach volume sum of throughs, rights and lefts in two lanes.
- (2) For a heavy right turn must evaluate worst of rights in one lane or throughs and rights in two lanes.
- (3) Approach volume sum of throughs and rights in two lanes.
- (4) Approach volume is through only because of free right and separate left.

K. Items that must be submitted as a part of the Local Area Transportation Review: In an effort to standardize what information is submitted in a Local Area Transportation Review, the following must be submitted before the preliminary plan application is considered complete when this review is required.

1. A site or area map showing existing roads in the area.
2. The location on the site map of "programmed" highway improvements, if any, that are in the County's Capital Improvements Program (CIP) or the State's Consolidated Transportation Program (CTP), which would affect traffic at the critical intersection(s) to be studied provided that they are scheduled for at least 50 percent of their construction costs to be expended within the program period of the adopted CIP or CTP.
3. Existing A.M. and P.M. peak traffic count summaries for all "nearby" critical intersections.
4. "Nearby" recorded subdivisions that would affect traffic at the critical intersection(s), with their location shown on the area map.
5. A table giving A.M. and P.M. peak hour traffic generated by all "nearby" recorded but unbuilt subdivisions showing the generation rate for each type of subdivision.
6. A.M. and P.M. peak hour traffic generated by the proposed subdivision proportioned to the traffic entering and leaving the site.

7. Trip distribution pattern, in percent, for the "nearby" recorded subdivisions during the A.M. and P.M. peak hour, with the pattern being shown on an area map.
8. Trip distribution pattern, in percent, for the proposed subdivision during the A.M. and P.M. peak hours, with the pattern being shown on an area map.
9. Maps which show separately and in combination:
 - (a) Existing A.M. and P.M. traffic volumes assigned to the affected highway system.
 - (b) Projected A.M. and P.M. traffic volumes assigned to the affected highway system for all "nearby" recorded subdivisions.
 - (c) Projected A.M. and P.M. traffic volumes assigned to the affected highway system for the proposed subdivision.
10. Any study performed to help determine how to assign recorded or proposed development traffic, such as a license plate study or special turning movement counts, should also be supplied.
11. Copies of all critical lane analyses, showing calculations for each approach, should be included.
12. A listing of all transportation improvements, if any, that the developer agrees to provide.

GLOSSARY OF SELECTED TERMS AND ABBREVIATIONS*

APFO and APF: (Adequate Public Facility Ordinance)

An element of the Subdivision Ordinance which requires the Planning Board to make a finding that existing or programmed public facilities are adequate before they can approve a preliminary plan of subdivision.

ADT: (Average Daily Traffic)

The number of vehicles travelling on a segment of roadway during the 24 hours of an average weekday.

CIP: (Capital Improvements Program)

Each year the Montgomery County Executive prepares and the County Council adopts a six year program for capital expenditures to expand and/or renovate Montgomery County's public facilities.

CPP: (Comprehensive Planning Policy)

The abbreviated designation for this annual report.

CTAC: (Citizens Technical Advisory Committee)

This is a committee of citizens and building industry representatives appointed by the Planning Board, plus ex-officio representatives from the County Executive staff. The CTAC has responsibility for reviewing the CPP and also for disseminating information concerning the Planning Board's administration of the APFO.

CTP: (Consolidated Transportation Program)

The transportation capital improvements program annually adopted and administered by the State of Maryland.

CSP: (Comprehensive Staging Policy)

The designation previously used to describe APF changes recommended by the Planning Board to the County Council in 1979. The CSP has been incorporated within the APF guideline changes included in the Staging Chapter of this CPP.

GROWTH POLICY

The aggregation of adopted public policies which control the location, scale, type and timing of development within the County. CPP materials reflect integral and essential aspects of Montgomery County's growth policy.

LAR: (Local Area Review)

The portion of the Staging Chapter which requires small scale review and evaluation of a particular area of the County in order to determine whether there are Adequate Public Facilities to serve a particular subdivision.

* (See page 91 for terms related directly to staging issues; Programmed Facility, Sewer Authorization/Pipeline, Staging Policy Area, Threshold).

LOS: (Level of Service)

A description of the quality of performance of a facility given the demands being placed upon that facility; mostly used in this report in terms of transportation facilities which reference an A to F quality scale. This is nationally accepted scale used to describe the quality of roadway service.

MdDOT: (Maryland Department of Transportation)

The State of Maryland arm government responsible for planning and implementing the improvements to those elements of the transportation system which are the administrative responsibility of the state.

ISSUES RAISED IN PUBLIC HEARING WHICH WILL BE ADDRESSED IN THE FUTURE

1. The Citizens Technical Advisory Committee endorsed the concept of a waiver of the APF requirements in those selected cases where the proposed development would uniquely promote a County policy or objective involving housing or economic development. A paragraph implementing this recommendation was contained in the draft. It has since been deleted, pending legal assessment of potential waiver consequences.
2. Montgomery County Planning Board staff will investigate the possibility of designating districts within larger planning areas wherever programmed facilities are found inadequate. Such district designation may permit a fee assessment in lieu of actual APF roadway construction by the developer.
3. The level of service (LOS) criteria will be additionally researched. An effort will be undertaken to describe existing and future traffic conditions in more readily understood language. In addition, this might include a review of the "acceptability" of the adopted level of service criteria.
4. Delays in road construction have created risks of temporary, unacceptable traffic congestion. Such delays occur under both County CIP and State CTP systems. A determination will be made as to the advisability of "discounting" programmed projects and/or altering the definition of a programmed facility.
5. A developer who supplies a major public facility and has recorded the property which require that facility, may lose the ability to resubdivide because of the public use of that facility. The equities involved in reserving the capacity of an added facility for the subdivision which provided the facility, will be examined.
6. The next CPP will incorporate examples of how these adopted guidelines have been applied to individual subdivision cases.

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